MegaRAC™ G3
User's Guide

MAN-840
03/15/04

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Revision History

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If…	Then…
You purchased this product from AMI or from a certified AMI reseller,	Call AMI technical support at 770-246-8645. Please be prepared to specify the serial number of the product.
This AMI product was installed as part of a system manufactured by a company other than AMI or you purchased an AMI product from an unauthorized reseller,	Call the technical support department of the computer manufacturer or the unauthorized reseller. AMI does not provide direct technical support in this case.

If an American Megatrends MegaRAC™ G3 card fails to operate as described or you are in doubt about a configuration option, please call technical support at 770-246-8645.

Web Site

We invite you to access the American Megatrends World Wide Web site at:

http://www.ami.com/

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Retail Packing List

You should have received the following:

- a MegaRAC™ G3 card
- one USB cable
- a warranty card
- this *MegaRAC™ G3 User's Guide* (located on the *MegaRAC™ G3 CD*)
- a *MegaRAC™ G3 Quick Installation Guide*
- a *MegaRAC™ G3 CD*

Note: Your MegaRAC G3 (series 840) may or may not ship with everything listed in the *Retail Packing List*. Contact your AMI authorized reseller to find out what is shipped with your MegaRAC G3.

Optional Components

The following components do not come with your MegaRAC™ G3 card. You must order these components separately.

- internal modem daughterboard (not designed to support *Console Redirection*)
- internal battery backup with battery clip
- MegaRAC G3 feature connector cable (I2C is an OEM version feature only, the I2C connector is motherboard specific)
- external power adapter and power cable

Note: The optional modem is **NOT** designed for *Console Redirection*. However, you can still perform Console Redirection, but it is debilitating and extremely slow.

Note: The optional MegaRAC™ feature connector cable must be custom made for your specific configuration.

Note: As of March 15th, 2004, the MegaRAC G3 firmware does not support the optional modem.

FCC Class B Statement

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

Note: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Warning

Changes or modifications to this device not expressly approved by American Megatrends could void the user's authority to operate the equipment.

Chapter 1 Introduction

Features

Feature	Description
Key Feature	• 100% out-of-band • 100% operating system independent
Soft Processor	• provides out-of-band connectivity • plugs into a mission critical server • half-sized PCI form factor plugs into any PCI slot
Remote Client	• industry standard Internet browser (any JavaScript 1.2 capable) • manage the server from anywhere in the world • SSL v3 for secure connection
Processor System On Chip (SOC)	• 32-Bit 266 MHz ~ 400 MIPS MMU • 16 K I-cache • 16 K D-cache
Memory	• 32 megabyte PC-133 MHz SDRAM standard (soldered on PCB, you cannot upgrade or remove)
Flash	• 16 bit, 16 megabyte flash ROM (soldered on PCB, you cannot upgrade or remove)
Ethernet LAN	• integrated SOC 10/100 MAC • external level one 10/100 BASE-TX Ethernet
On-Board Modem + DAA (Optional)	• 56K socket modem (not designed to support *Console Redirection*) **Note:** As of March 15th, 2004, the MegaRAC G3 firmware does not support the optional modem.
I2C Controller Hardware Monitor (OEM version feature)	• ambient temperature monitoring • PCI voltages monitoring • card internal voltages monitoring • battery voltage monitoring • RTC • external RTC for time stamp of events
Power Supply	switching logic between optional 6 V wall adapter, 5 V PCI, 3.3 V PCI, and optional on-board battery
Battery Backup (Optional)	900 mAh LION battery provides 30 minutes of battery backup in case of host system or optional wall adapter power failure
Form Factor	• half-size standard PCI card
Environmental Specifications	• storage temperature: -20 degrees to 80 degrees C • relative humidity: 5 to 80 percent non-condensing @ 40 degrees • operating temperature: 0 to 45 degrees C • vibration: 2.5G acceleration over 2000 Hz sine wave, 2oct/mian sine sweep • shock: 20G; 11 msec duration, half-sine shock sweep
Monitoring	• IPMI 1.5 compliant (OEM version feature) • I2C sensors (OEM version feature) • SDR and Soft Processor (SP) file support for easy customization (OEM version feature) • OEM specific

Cont'd

Features, Continued

Feature	Description
Communication	• 10/100 megabit Ethernet LAN • 56K modem (optional, not designed to support *Console Redirection*) • TCP/IP • DHCP enabled • SNMP • web-based interface
USB Device Controller for Mouse/Keyboard	• USB 1.1 device controller
USB Device Controller for	• USB 2.0 device controller
USB Device Controller for	• USB 1.1 device controller
USB Hub	• USB 2.0 hub
Serial Port X 3	• debug port • RS485 • one external
Debug Support	• Jtag ICE
Alert Notification	• SNMP trap up to eight destinations • numeric and alphanumeric paging (when optional modem is installed) • email notification
Console Redirection	• via 10/100 megabit Ethernet LAN • up to three multiple redirection sessions • up to 15 screens per second high speed redirection hardware engine • no overhead on the host system, complete operating system independence • redirect BIOS screens and setup screens • seamless text and graphics transition
Security	• SSL (Secured Socket Layer) 3.0 • DAA (Digestive Authentication Access) • MD-5
Virtual Boot	• USB 2.0 CD-ROM • USB floppy • supports boot to image • allows remote operating system boot up and installation
Host Side Operating System Support	• Windows 2000/2003/XP and above • RedHat 8.0 and above
OEM Development Kit *Platform Management Configuration Program* (PMCP)	available

Chapter 2 Installing Your MegaRAC G3 Card

Before You Start

Avoid Electro-Static Discharge (ESD)

Electro-Static Discharge (ESD) can damage the MegaRAC G3 card and other system components. Keep your MegaRAC G3 card in its anti-static bag until it is to be installed. Avoid contact with any component or connector on any adapter card, printed circuit board, or memory module. Handle these components by the mounting bracket.

Perform all unpacking and installation procedures on a ground-connected anti-static mat. Wear an anti-static wristband grounded at the same point as the anti-static mat. You can also use a sheet of conductive aluminum foil grounded through a one megaohm resistor instead of the anti-static mat. Similarly, a strip of conductive aluminum foil wrapped around the wrist and grounded through a one megaohm resistor serves the same purpose as a wristband.

MegaRAC G3 Installation and Setup

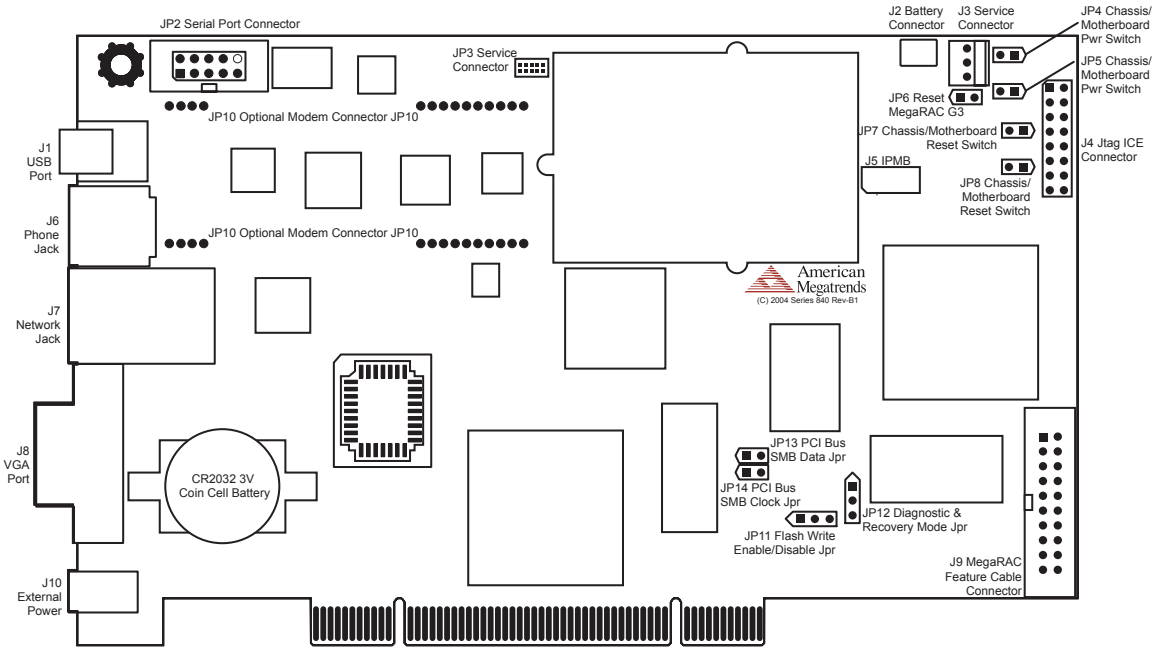
Use the following steps to install the MegaRAC G3 card into the host system.

Step	Action
1	Unpack the MegaRAC G3 card (*and check jumper settings*)
2	Install the optional battery and battery clip
3	Install the optional modem daughterboard
4	Plug in the MegaRAC G3 card into the host system and attach internal cables
5	Connect external cables
6	Confirm the motherboard's BIOS settings
7	Install the operating system and MegaRAC G3 card's drivers
8	Install all American Megatrends MegaRAC G3 Windows Software Components
9	Setup your client system's Internet browser
10	Connect to the MegaRAC G3 from a client system
11	Load the MegaRAC G3 SDR and Soft Processor (SP) File for your motherboard or server board model (OEM version feature)

Note: Inspect the cardboard carton for obvious damage.

Step 1 Unpack the MegaRAC G3 Card (*and check jumper settings*)

MegaRAC G3 Card Layout


JP2 Serial Port Connector
J2 Battery Connector
J3 Service Connector
JP4 Chassis/ Motherboard Pwr Switch
JP5 Chassis/ Motherboard Pwr Switch
JP3 Service Connector
JP6 Reset MegaRAC G3
JP7 Chassis/Motherboard Reset Switch
J4 Jtag ICE Connector
J5 IPMB
JP8 Chassis/ Motherboard Reset Switch
J1 USB Port
JP10 Optional Modem Connector JP10
J6 Phone Jack
JP10 Optional Modem Connector JP10
American Megatrends
(C) 2004 Series 840 Rev-B1
J7 Network Jack
J8 VGA Port
CR2032 3V Coin Cell Battery
JP13 PCI Bus SMB Data Jpr
JP14 PCI Bus SMB Clock Jpr
JP12 Diagnostic & Recovery Mode Jpr
JP11 Flash Write Enable/Disable Jpr
J9 MegaRAC Feature Cable Connector
J10 External Power

MegaRAC G3 MAC Address

Your MegaRAC G3 card has a unique MAC address. The MAC address is the only way to distinguish one MegaRAC G3 card from another when you run programs such as *Remote Recovery Application (RRA)* and *RacTrendsSeek Locator*. You can write down your MegaRAC G3 card's MAC address in the table below or in *Appendix H, MAC Address Map*. See the first line for an example.

MAC Address	Location	Description
00-40-D9-02-9B-3C	Server Room, Rack 2, 5	Windows 2003 Advanced Server, Mail Server

Cont'd

Step 1 Unpack the MegaRAC G3 Card (*and check jumper settings*), Continued

Check the following jumpers:

Jumper	Setting
JP4	Confirm that pins one and two are open.
JP5	Confirm that pins one and two are open.
JP6	Confirm that pins one and two are open.
JP7	Confirm that pins one and two are open.
JP8	Confirm that pins one and two are open.
JP11	Confirm that pins one and two are shorted.
JP12	Confirm that pins one, two and three are open.
JP13	If your hosts system's motherboard has support for I2C on the PCI slots, place a short pins one and two. If not, confirm that pins one and two are open.
JP14	If your hosts system's motherboard has support for I2C on the PCI slots, place a short pins one and two. If not, confirm that pins one and two are open.

Note: Only revision B1 and newer revisions of the MegaRAC G3 cards have these two jumpers. Revisions A and B do not have JP13 and JP14.

JP4 and JP5 Chassis/Motherboard Power Switch

Verify that there is no jumper on JP4 and JP5. These two headers are to be used with a cable, not a jumper.

JP6 MegaRAC G3 Reset Button

You can temporarily short this jumper to reset your MegaRAC G3 card. For normal operations, verify that there is no jumper on JP6.

Pin	Description
1	Ground
2	Reset #

JP7 and JP8 Chassis/Motherboard Reset Switch

Verify that there is no jumper on JP7 and JP8. These two headers are to be used with a cable, not a jumper.

JP11 Flash Write Enable/Disable

You can write-protect your MegaRAC G3 card's firmware so that it cannot be flashed. By default, pins one and two are shorted so that you can flash the firmware.

Pin	Description
1	VCC3
2	Write-Protect Enabled
3	Ground

Pin	Description
1-2	Flash Write Enable
2-3	Flash Write Disable

Cont'd

Step 1 Unpack the MegaRAC G3 Card (*and check jumper settings*), Continued

JP12 Diagnostic and Recovery Mode Jumper

This jumper is primarily used to recover a failed flash attempt. By shorting pins one and two, you can place your MegaRAC G3 card into *Diagnostics Mode*. By shorting pins two and three, you can place your MegaRAC G3 card into *Recovery Mode*. See *Appendix C, Remote Recovery Application (RRA)* for more information on how to recover your MegaRAC G3 card. By default, pins one, two and three are open.

Pin	Description
1	GP I/O PA7
2	Ground
3	GP I/O PA10

JP13 and JP14 PCI Bus SMB Data and Clock Jumper

These two headers allow your MegaRAC G3 card to read I2C bus information. If your hosts system's motherboard has support for I2C on the PCI slots, place a jumper on these two headers. By default these headers are open.

Note: Only revision B1 and newer revisions of the MegaRAC G3 cards have these two jumpers. Revisions A and B do not have JP13 and JP14.

Note: Most PCI slots have a "floating" I2C bus. A "floating" I2C bus means that there is no physical connection between the two I2C pins on the PCI slot and the motherboard's I2C bus. Shorting JP13 and JP14 would be useless in this case.

Note: JP13 and JP14 can be used in place of the MegaRAC Feature Cable to gather I2C bus information from the motherboard.

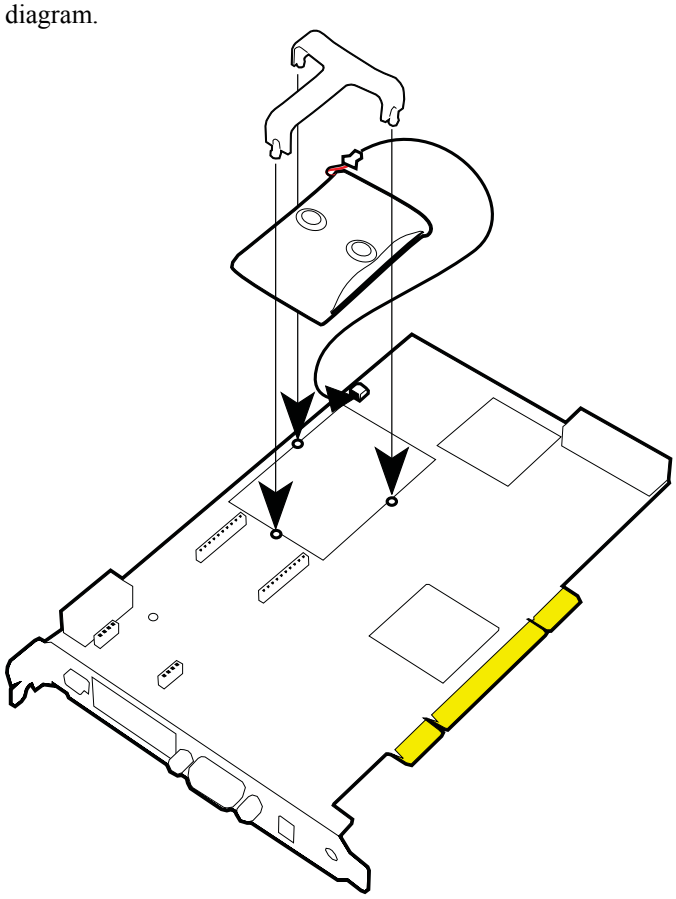
Note: Only the OEM version can utilize the hardware health monitoring capabilities of MegaRAC G3 card. The hardware health monitoring function requires an OEM specific cable and *Sensor Definition Kit* (SDK/SDR) file and *Soft Processor* (SP) file.

Step 2 Install the Optional Battery and Battery Clip

The MegaRAC G3 on-board battery backup is an optional component. When the optional battery is installed, your MegaRAC G3 card can stay powered on for 30 minutes without any external power from the host system or AC adapter.

BBU (Battery Backup Unit) Installation
J2 Battery Connector

To install the Battery Backup Unit, plug the battery cable into the J2 Battery connector and place the battery pack in between the three mounting holes. Next, align and snap the plastic battery clip into the three mounting holes over the battery pack. See the following diagram.



Cont'd

Step 2 Install the Optional Battery and Battery Clip, Continued

Charging the Battery Pack

> ***Warning***
>
> *Risk of explosion if battery type used is incorrect.*
> ***ONLY** use AMI battery part number BAT-LIION-3.6-01.*

The optional battery pack is shipped uncharged. The MegaRAC G3 card automatically starts to charge the battery after you install it. You must charge the battery pack before it can be used to provide backup power to the MegaRAC G3 card. The minimum time that the battery must be charged is:

AMI Part Number	Description	Weight	Time to Charge
BAT-LIION-3.6-01	Battery, Li-Ion, 3.6 V, 855/900 mAh on-board battery pack with mounting brackets	33 g	six hours

Note: Li-Ion has no memory effect. Lithium-ion cells offer extended cycle life when cycled at low depth of discharge.

Storage

If you keep a stock of extra MegaRAC G3 batteries, store them at room temperature.

Note: The recoverable capacity of cells stored for over one year at room temperature and fully charged is 94%. The retained capacity of these same cells is 87%. This means the self-discharge rate for a fully charged cell is approximately 150 mAh per year or 427 uAh per day. The self-discharge rate for cells is non-linear. A partially charged cell has a self-discharge rate of about 80 uAh per day.

Changing the Battery Pack

The optional MegaRAC G3 battery pack must be replaced every 400 cycles. Cells retain 80% of their original capacity after 400 cycles. A cycle is defined as a full charge (4.2V) followed by a full discharge (2.8V). Keep in mind that cycling or storing the cells at elevated temperatures can reduce the cell capacity and cycle life. Cells discharged and stored at low temperatures can extend the shelf life of the batteries.

Step	Action
1	Bring down the operating system properly. Turn the computer power off. Remove the computer cover. Remove the MegaRAC G3 card.
2	Disconnect the battery pack cable from the J2 jumper on the MegaRAC G3 card. Remove the plastic battery clip and then replace the Battery Backup Unit.
3	Install a new battery pack and connect the new battery pack to the J2 jumper. Align and snap the plastic battery clip into the three mounting holes over the battery pack.
4	Reinstall the MegaRAC G3 card into the host system.

Cont'd

Step 2 Install the Optional Battery and Battery Clip, Continued

Disposing of a Battery Pack

> ***⚠ Warning***
>
> *Do not dispose of the MegaRAC G3 optional battery pack by fire. Do not mutilate the battery pack. Do not damage it in any way. Toxic chemicals can be released if it is damaged. Do not short-circuit the battery pack.*

The material in the battery pack contains heavy metals that can contaminate the environment. Federal, state, and local laws prohibit disposal of some rechargeable batteries in public landfills. These batteries must be sent to a specific location for proper disposal. Call the Rechargeable Battery Recycling Corporation at 678-419-9990 (FAX: 678-419-9986) for an authorized battery disposal site near you. For a list of battery disposal sites, write to:

Rechargeable Battery Recycling Corporation
`http://www.rbrc.org/`
1000 Parkwood Circle
Suite 450
Atlanta, GA 30339
Phone: 678-419-9990
Fax: 678-419-9986

Battery Disposal Laws

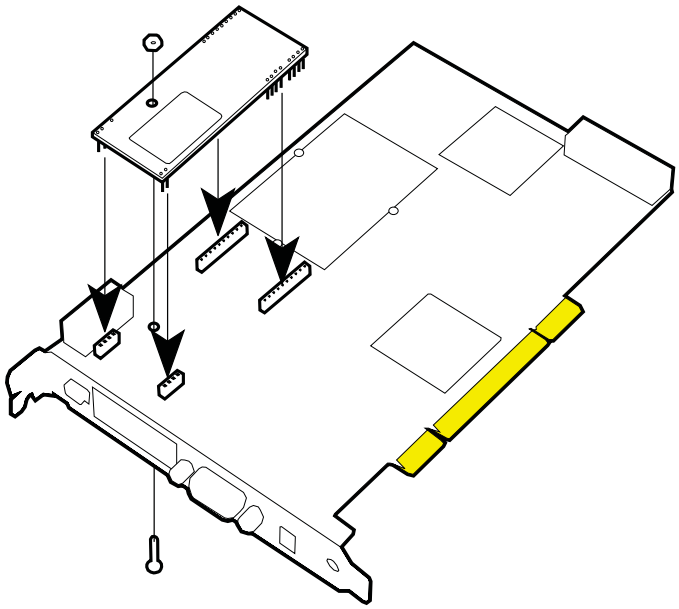
> **IMPORTANT!**
>
> Most used Lithium-ion batteries are not classified as hazardous waste under the federal RCRA (Resource Conservation and Recovery Act). Although Minnesota law requires that Lithium-ion batteries be labeled "easily removable" from consumer products, and that Lithium-ion batteries must be collected by manufacturers, the Minnesota Pollution Control Agency (MPCA) has granted a temporary exemption from these requirements.

Other Laws in Other Areas

American Megatrends reminds you that you must comply with all applicable battery disposal and hazardous material handling laws and regulations in the country or other jurisdiction where you are using an optional battery pack on the MegaRAC G3 card.

Step 3 Install the Optional Modem Daughterboard

The MegaRAC G3 modem daughterboard is an optional component. Locate JP10 on the MegaRAC G3 card. It has a series of pinholes that allow you to insert the modem daughterboard. Match the modem daughterboard and the pin holes so that the pins align properly. Insert the modem daughterboard by sliding it straight down into the MegaRAC G3 card. See *Appendix F : Modem Daughterboard* for more information.



Note: The optional modem is **NOT** designed for *Console Redirection*. However, you can still perform Console Redirection, but it is debilitating and extremely slow.

Note: As of March 15th, 2004, the MegaRAC G3 firmware does not support the optional modem.

Step 4 Plug in the MegaRAC G3 Card into the Host System and Attach Internal Cables

Physically plug in the MegaRAC G3 card into any available PCI slot inside the host system.

J3 Service Connector

This jumper is used exclusively for servicing the MegaRAC G3 card. J3 is not described in this document.

J4 JTAG (Joint Test Action Group) ICE (In-Circuit Emulator) Connector

This header is used to debug and service the MegaRAC G3 card. J4 is not described in this document.

Cont'd

Step 4 Plug in the MegaRAC G3 Card into the Host System and Attach Internal Cables, Continued

J5 IPMB (Intelligent Platform Management Bus)

If your motherboard has an IPMB connector, you can connect a cable from J5 on the MegaRAC G3 card to the IPMB connector on your motherboard.

Pin	Description
1	Positive Signal
2	Ground
3	Negative Signal

IPMB (Intelligent Platform Management Bus)

The IPMI specification was developed by Intel, Dell, Hewlett-Packard, and NEC to provide a standard interface to be used for monitoring server items such as temperature, voltage, fans, power supplies, and chassis. IPMI is comprised of three specifications Intelligent Platform Management Interface (IPMI), Intelligent Platform Management Bus (IPMB) and Intelligent Chassis Management Bus (ICMB). The IPMI specification defines the interface between management software and chassis management hardware. The IPMB specification defines the internal Intelligent Platform Management Bus. The ICMB specification defines an external bus for connecting additional IPMI enabled systems.

The electrical interconnect for system management is based on the inter-IC (I2C) bus. This bus is a two wire serial interface (clock, data) driven by open-collector drivers. Devices arbitrate for the bus based on a collision detection mechanism. The I2C data and I2C clock signals are referred to as an IPMB.

The IPMB connector can be used to read IPMI information from the motherboard's System Management Controller. The format and definition of the IPMI information must be based on the IPMI v1.5 Specification.

The IPMI specification was architected around the server motherboard environment. In a typical motherboard, the Management Controller connects to a variety of dumb sensors located on the motherboard and within the chassis. The command set contains commands tailored to this environment and are intended to handle sensors, data repositories, event logs and watchdog timers.

Cont’d

Step 4 Plug in the MegaRAC G3 Card into the Host System and Attach Internal Cables, Continued

J9 MegaRAC Feature Connector

This feature connector is primarily used for operating the host system's motherboard power and reset switch. It can also be used to gather I2C bus information from the motherboard.

Pin	Description	Pin	Description
1	Not Connected	11	Reset_Host #
2	I2C Clock	12	Ground
3	Not Connected	13	Ground
4	Not Connected	14	Not Connected
5	Power_Off #	15	Not Connected
6	I2C Data	16	Ground
7	Not Connected	17	Not Connected
8	Not Connected	18	Not Connected
9	Not Connected	19	Not Connected
10	Not Connected	20	Ground

Note: JP13 and JP14 can be used in place of the MegaRAC Feature Cable to gather I2C bus information from the motherboard.

Note: JP4 and JP5 can be used in place of the MegaRAC Feature Cable to power on, power off, and power cycle the motherboard.

Note: JP7 and JP8 can be used in place of the MegaRAC Feature Cable to reset the motherboard.

Note: Only the OEM version can utilize the hardware health monitoring capabilities of MegaRAC G3 card. The hardware health monitoring function requires an OEM specific cable and *Sensor Definition Kit* (SDK/SDR) file and *Soft Processor* (SP) file.

Note: IPMI support is an OEM version feature.

Note: This cable is an optional component and must be custom made for your specific configuration.

JP2 Serial Port Connector

You can connect an external 9 pin serial port connector to this header. This header is primarily used to text redirect over the serial port.

JP3 Service Connector

This jumper is used exclusively for servicing the MegaRAC G3 card. JP3 is not described in this document.

Cont'd

Step 4 Plug in the MegaRAC G3 Card into the Host System and Attach Internal Cables, Continued

JP4 and JP5 Chassis/Motherboard Power Switch

JP4 and JP5 can be used in place of the MegaRAC Feature Cable to power on, power off, and power cycle the motherboard.

Connect a two pin cable from the motherboard's Power (Soft On/Off) header to JP4 on your MegaRAC G3 card. Connect the chassis power switch to JP5 on your MegaRAC G3 card.

Note: JP4 and JP5 can be used in place of the MegaRAC Feature Cable to power on, power off, and power cycle the motherboard.

JP6 MegaRAC G3 Reset Button

You can short this jumper to reset your MegaRAC G3 card.

Pin	Description
1	Ground
2	Reset #

JP7 and JP8 Chassis/Motherboard Reset Switch

JP7 and JP8 can be used in place of the MegaRAC Feature Cable to reset the motherboard.

Connect a two pin cable from the motherboard's Reset header to JP7 on your MegaRAC G3 card. Connect the chassis reset switch to JP8 on your MegaRAC G3 card.

Note: JP7 and JP8 can be used in place of the MegaRAC Feature Cable to reset the motherboard.

Step 5 Connect External Cables

- Connect the USB cable from the back of the MegaRAC G3 card to the motherboard's USB port.
- Connect your VGA monitor to your MegaRAC G3 card.
- Connect the RJ45 LAN cable from your local network to your MegaRAC G3 card.
- Connect your phone cord from the back of the MegaRAC G3 card to the telephone wall outlet. (Only if the optional modem daughterboard is installed.)
- Connect your AC adapter. (Only if the AC Adapter is part of your MegaRAC kit)

Step 6 Confirm the Motherboard's BIOS Settings

Power on the motherboard and enter the BIOS. Using the following table, confirm that your motherboard's BIOS settings are correct.

BIOS Section	Setting
Boot Options> Removable Devices	AMI Virtual Floppy or USB Boot Device
Boot Options> ATAPI CDROM	AMI Virtual CDROM or USB Boot Device
Advanced> PCIPnP> Configuration> Legacy USB Support	Enable

Save the BIOS settings and restart the computer.

Note: Make sure that your motherboard BIOS supports *Legacy USB devices*, *USB Boot* or *Boot to USB*.

Note: On some motherboards and server boards, depress the <CTRL>, <ALT>, and <ESC> keys simultaneously to enter the BIOS. On others use the <F2> keys. See your server's documentation for more information on entering the BIOS setup.

Step 7 Install the Operating System and MegaRAC G3 Drivers

Step	Action
1	Install the operating system (if applicable) on the host system.
2	(Windows 2000/2003/XP only) When prompted for the *AMI Virtual Floppy* drivers, install the MegaRAC G3 card's *AMI Virtual Floppy* drivers located on the *MegaRAC™ G3 CD* in the **`INF`** folder. **Note:** Virtual floppy is not supported on all versions of the MegaRAC G3 card.
3	(Windows 2000/2003/XP only) When prompted for the virtual CD-ROM drivers, install the Windows default CD-ROM drivers. **Note:** Do not use the **`amivirtfl.inf`** when prompted to install the virtual CD-ROM drivers. The *AMI Virtual CD-ROM* device does not require any special drivers. You can select the default option Microsoft Windows provides.

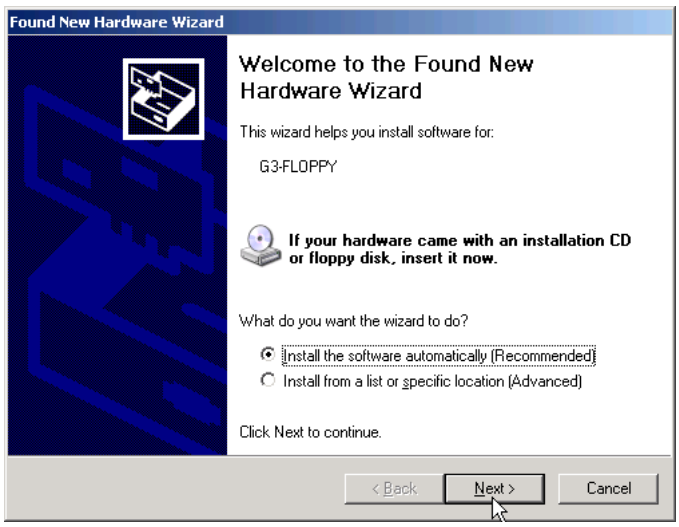
Cont'd

Step 7 Install the Operating System and MegaRAC G3 Drivers, Continued

Installing AMI Virtual Floppy Drivers on Microsoft® Windows Operating Systems

Microsoft® Windows 2000/2003/XP operating systems need an **`.INF`** for the *AMI Virtual Floppy* device exposed by the G3 card.

Note: This installation procedure needs to be done one time only on the host system. Once the *AMI Virtual Floppy* is properly loaded, you can perform floppy redirection without going through any extra steps.

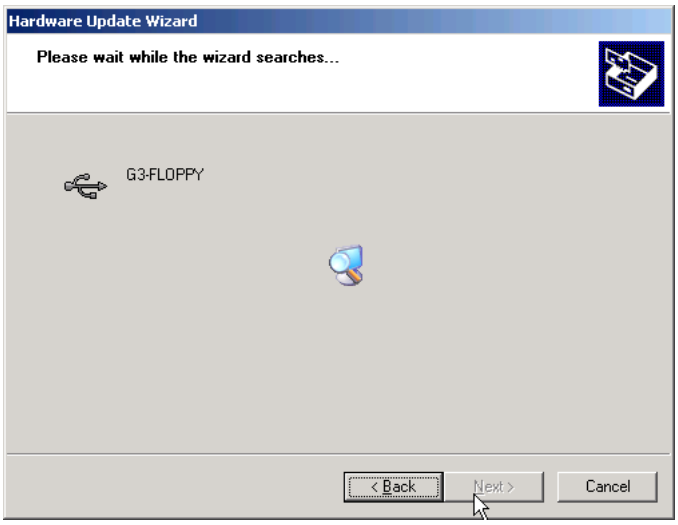
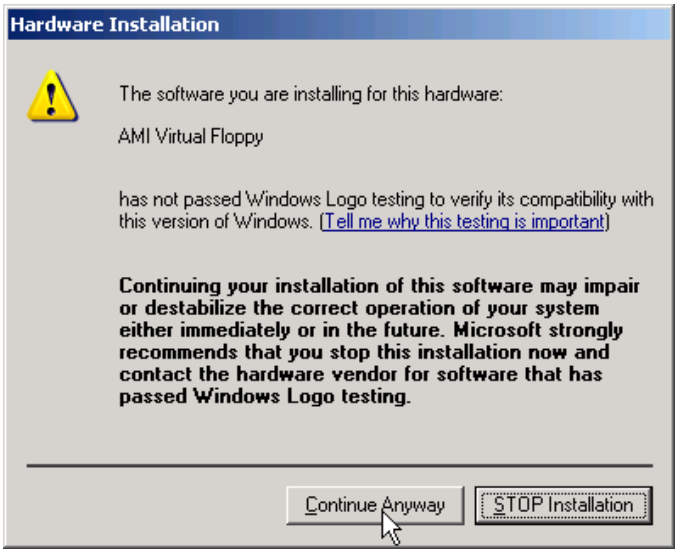
Step	Action
1	Microsoft® Windows 2000/2003/XP operating systems for the *AMI Virtual Floppy* device **`.INF`** file the first time you install the MegaRAC G3 card on the server. 

Found New Hardware Wizard
Welcome to the Found New Hardware Wizard
This wizard helps you install software for:
G3-FLOPPY
If your hardware came with an installation CD or floppy disk, insert it now.
What do you want the wizard to do?
Install the software automatically (Recommended)
Install from a list or specific location (Advanced)
Click Next to continue.
< Back
Next >
Cancel

Cont'd

Step 7 Install the Operating System and MegaRAC G3 Drivers, Continued

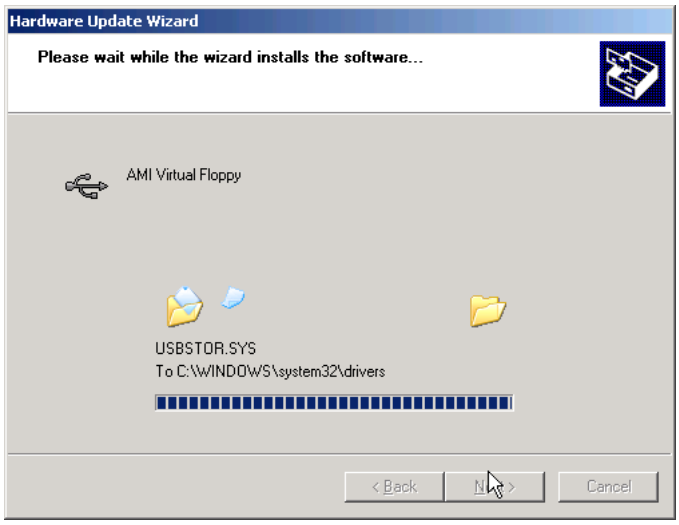
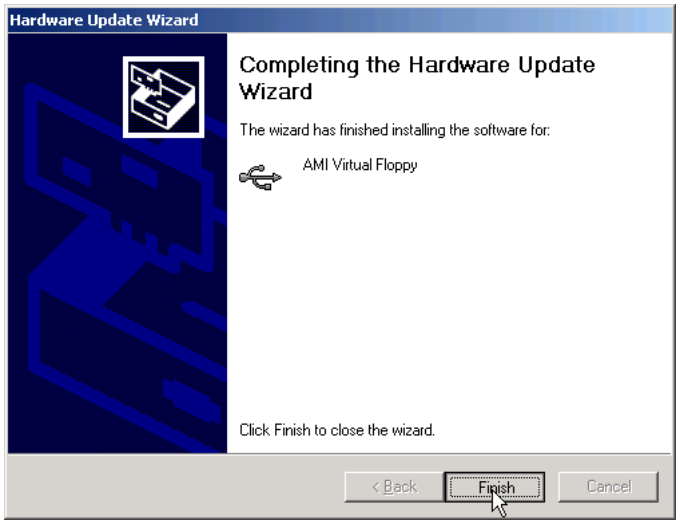
Installing AMI Virtual Floppy Drivers on Microsoft® Windows Operating Systems, Continued

Step	Action
2	The *Hardware Update Wizard* begins to search for the drives on the *MegaRAC G3 CD*.  **Note:** Do **NOT** use the default file that the Microsoft® Windows operating system presents when it is searching for the *AMI Virtual Floppy* driver. Instead, select the *Specify a Location* option and select the **.INF** file located in the *MegaRAC G3 CD* called **`amivirtfl.inf`** in the **`INF`** directory.
3	At the time of the MegaRAC G3 card release, the *AMI Virtual Floppy* drivers have not undergone *Windows Logo* testing and verification. When prompted with the *Windows Logo* dialog box, left click the *Continue Anyway* button.  **Note:** Do **NOT** use the default file that the Microsoft® Windows operating system presents when it is searching for the *AMI Virtual Floppy* driver. Ensure that the Microsoft® Windows operating system is asking for the *AMI Virtual Floppy* driver before allowing the installation of the **`.INF`** file to continue.

Cont'd

Step 7 Install the Operating System and MegaRAC G3 Drivers, Continued

Installing AMI Virtual Floppy Drivers on Microsoft® Windows Operating Systems, Continued

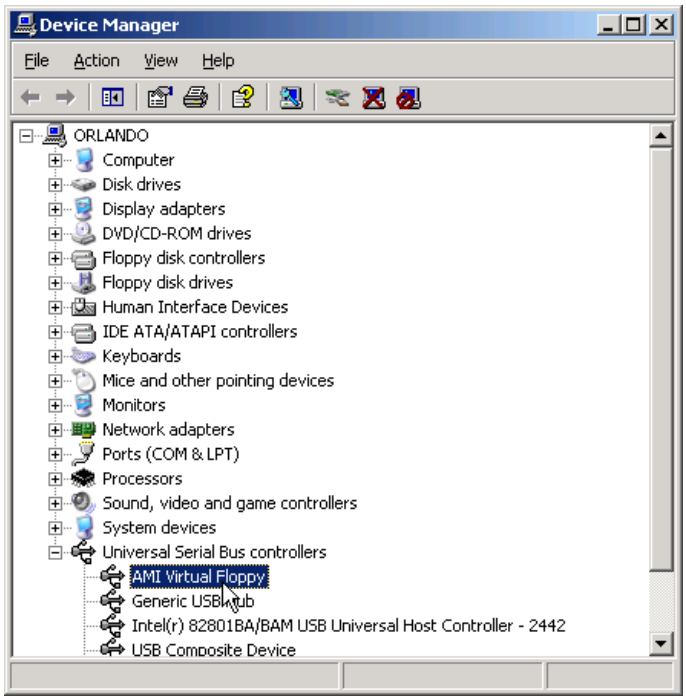
Step	Action
4	The *Hardware Update Wizard* begins to load the *AMI Virtual Floppy* driver from the *MegaRAC G3 CD*. Its status is displayed. 
5	Once this file is loaded and recognized by the Microsoft® Windows operating system, left click the *Finish* button. The Microsoft® Windows operating system may require a reboot of the host system after the installation of the *AMI Virtual Floppy* driver. 

Cont'd

Step 7 Install the Operating System and MegaRAC G3 Drivers, Continued

Installing AMI Virtual Floppy Drivers on Microsoft® Windows Operating Systems, Continued

Step	Action
6	Congratulations! You have successfully installed the *AMI Virtual Floppy* driver.



Step 8 Install the American Megatrends MegaRAC G3 Windows Software Components

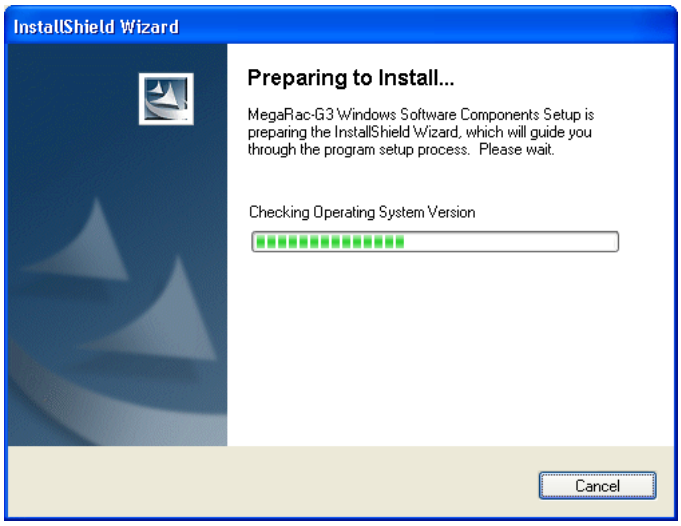
American Megatrends MegaRAC G3 *Windows Software Components* is a collection of MegaRAC G3 host-side and remote access components. These programs are briefly explained in the following table:

Program	Description
G3ConfigApp	The *G3ConfigApp* program allows you to configure the MegaRAC G3 card from the host system or from a client system.
WinCuriG3	The *WinCuriG3* program is a command prompt-based program that you can use to configure the MegaRAC G3 card. It allows you all the functionality of both the Internet browser-based *Remote Access Companion for MegaRAC G3* and the *G3ConfigApp* program.
HostHeartbeat	HostHeartbeat is installed as a service in Windows. It is used to tell whether the operating system on the host system is operating or not. It can also detect whether the operating system was shutdown normally or abruptly.
Floppy Image Creator	*Floppy Image Creator* allows you to create bootable floppy image files that you can use to boot the MegaRAC G3 card from.
Platform Management Configuration Program (PMCP)	*Platform Management Configuration Program (PMCP)* allows you to create SDR and Soft Processor (SP) Files for your specific motherboard or server board.
Remote Recovery Application (RRA)	The *Remote Recovery Application (RRA)* is a recovery tool that can be executed from a remote client system located on the same network as the MegaRAC G3 card. You can use it to recover a failed flash attempt. **Note:** You must physically set the MegaRAC G3 card you want to recover into *Recovery Mode*. To do this, simply short pins two and three on jumper JP12 on your MegaRAC G3 card. **Note:** Your MegaRAC G3 card must be write enabled before you can flash an image to it. Confirm that pins one and two on jumper JP11 are shorted on your MegaRAC G3 card. **Note:** The firmware upgrade process is a crucial operation. Make sure that the chances of a power or connectivity loss are minimal when performing this operation.
RacTrendsSeek Locator	In order to configure your MegaRAC G3 card completely, you must access the MegaRAC G3 from another system on the same network. To do this, you must know the MegaRAC G3 card's IP address. If you have installed the MegaRAC G3 on a network that uses DHCP, you can search the network for the MegaRAC G3 card. To locate and find out its IP address, you can use *RacTrendsSeek Locator*.

Cont'd

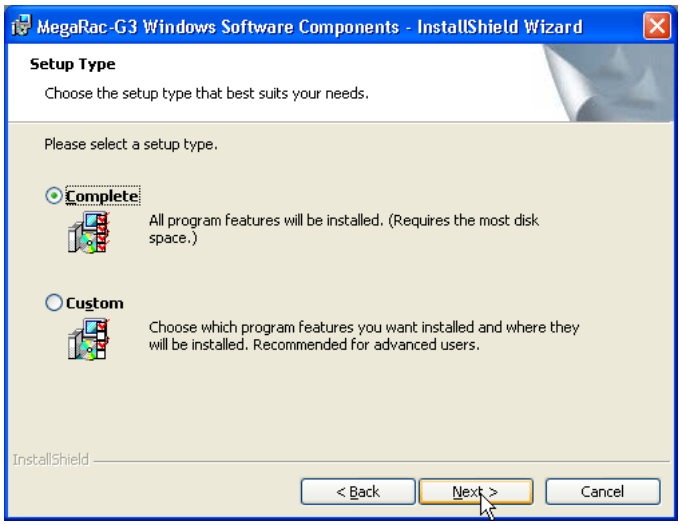
Step 8 Install the American Megatrends MegaRAC G3 Windows Software Components, Continued

Follow the steps outlined in the following table to install the American Megatrends MegaRAC G3 *Windows Software Components*:

Step	Description
1	Insert your *MegaRAC™ G3 CD* into the host system. The host system is the system that has the MegaRAC G3 card installed into it. Browse to the following folder and file: **`CDROM\ServerAgents\Win32\Setup.exe`**
2	Double left click the **`Setup.exe`** icon to begin the installation of the American Megatrends MegaRAC G3 *Windows Host Component*. 

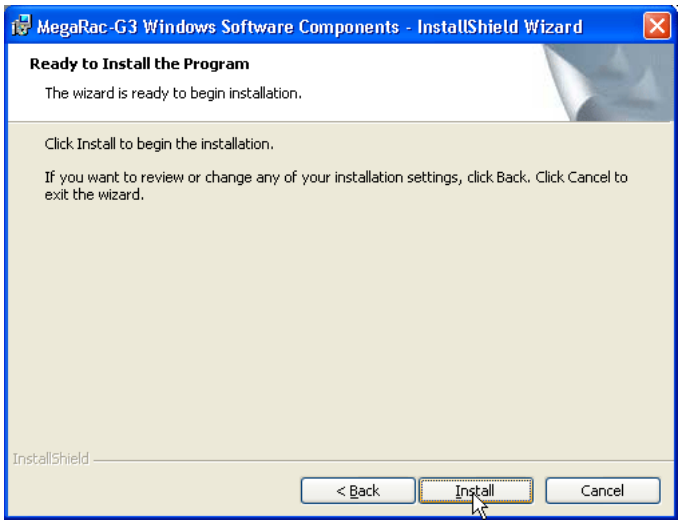
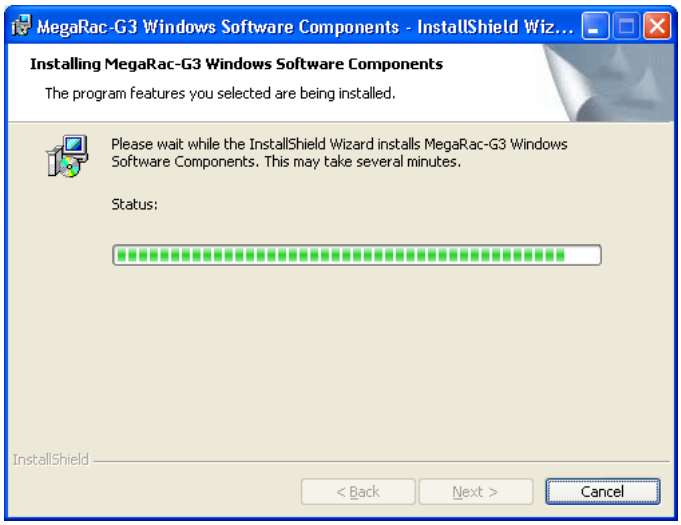
Cont'd

Step 8 Install the American Megatrends MegaRAC G3 Windows Software Components, Continued

Step	Description
3	The American Megatrends MegaRAC G3 *Windows Host Component* setup window opens. Left click the *Next* button.
4	Skip this step unless the *Customer Information* window opens. Enter your name and your organization's name in the appropriate fields. Select the option for *Install this application for* and left click the *Next* button.
5	The *Setup Type* window opens. Select the *Complete* setup option. Left click the *Next* button. 

Cont'd

Step 8 Install the American Megatrends MegaRAC G3 Windows Software Components, Continued

Step	Description
6	The *Install Program* window opens. Left click the *Install* button. 
7	The *Installation Progress* window opens. 

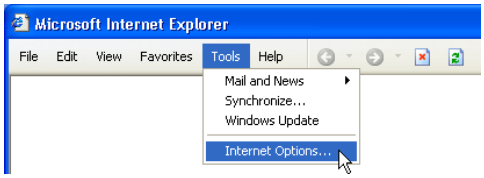
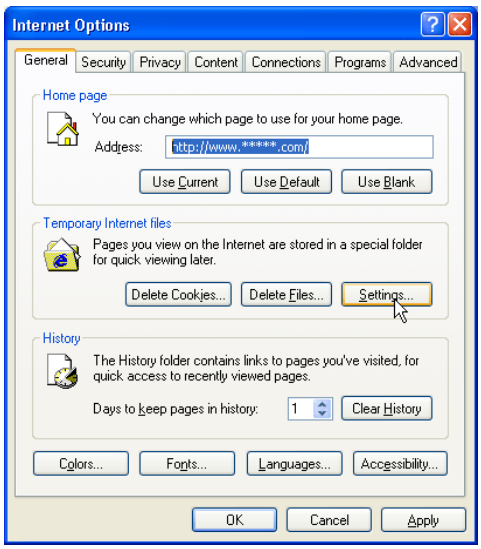
Cont'd

Step 8 Install the American Megatrends MegaRAC G3 Windows Software Components, Continued

Step	Description
8	The installation is complete. Left click the *Finish* button.
9	Repeat steps 1 through 8 on a local network computer that you want to use to access the host system.

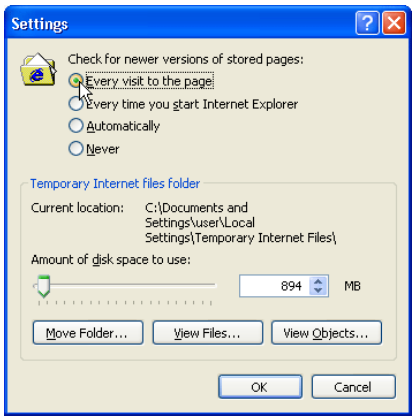
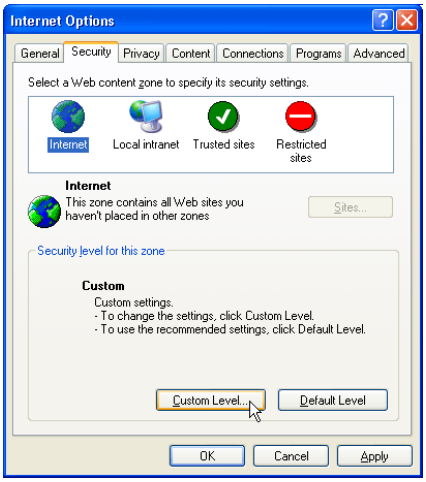
Step 9 Setup Your Client Internet Browser

You must first setup your Internet browser on the client system before you can redirect the host system's console or view the *Crash* screen. Follow the instructions in the table below:

Step	Description
1	Open *Internet Options*. To get there, open your Internet Explorer browser, left click *Tools* and then *Internet Options*. 
2	The *Internet Options* window opens. Left click the *Settings* button. 

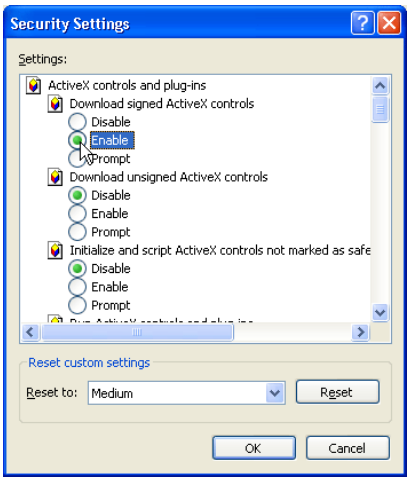
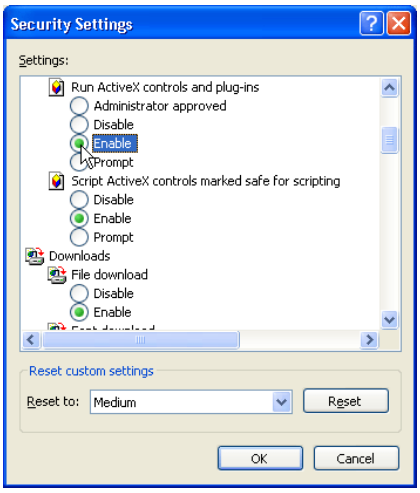
Cont'd

Step 9 Setup Your Client Internet Browser, Continued

Step	Description
3	The *Settings* window opens. Left click the *Every visit to the page* button or *Automatically* button. Left click the *OK* button to apply the change and to go back to the *Internet Options* window.  **Note:** Other settings can cause old data to be displayed when performing operations on the MegaRAC G3.
4	Next, you must setup Internet Explorer to allow the downloading of Signed ActiveX controls and also allow it to run Signed ActiveX controls. To do this, left click the *Security* tab and then the *Custom Level* button.  **Note:** In Microsoft Windows 2003 server operating systems, the default security setting is *High*, and this disables many items (besides the Active X ones mentioned in this document) that are necessary to even access the MegaRAC GUI. The security settings for a Microsoft Windows 2003 server operating system remote client must be on *Medium* or *Low*.

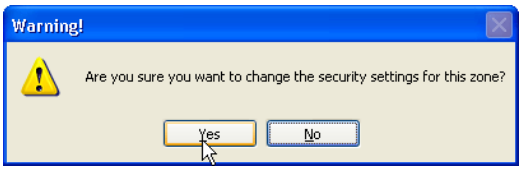
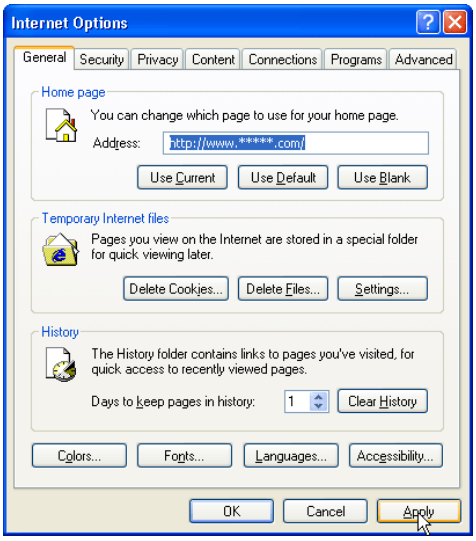
Cont'd

Step 9 Setup Your Client Internet Browser, Continued

Step	Description
5	The *Security Settings* window opens. Left click the *Enable* button under the *Download signed ActiveX controls* section. 
6	Scroll down and left click the *Enable* button under the *Run ActiveX controls and plug-ins* section. Left click the *OK* button. 

Cont'd

Step 9 Setup Your Client Internet Browser, Continued

Step	Description
7	You are prompted with a *Warning* window. Left click the *Yes* button to accept the changes to the Internet zone and to go back to the *Internet Options* window. 
8	Left click the *Apply* button and then the *OK* button to make the changes.  **Note:** You must restart Internet Explorer before the changes take effect. **Note:** *Remote Console* cannot run with any other security settings in Internet Explorer.

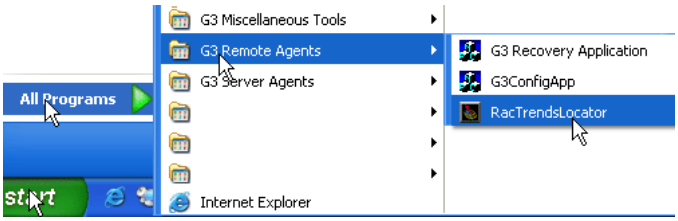
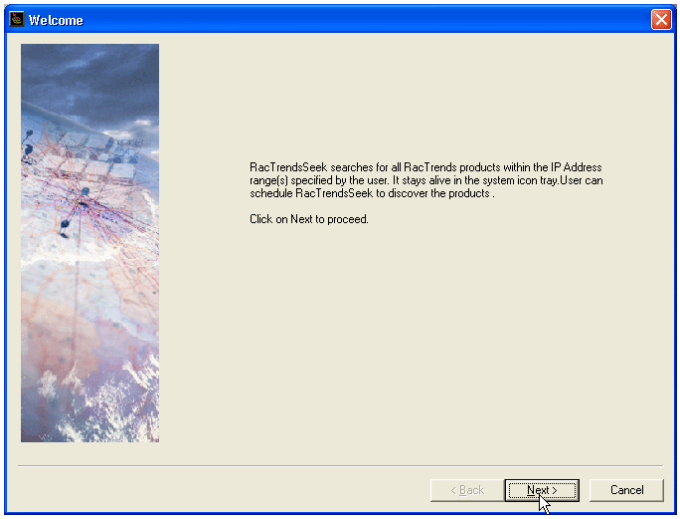
Step 10 Connect to the MegaRAC G3 from a Client System

In order to connect to the MegaRAC G3 card, you must access the MegaRAC G3 from another system on the same network. This document refers to this other system as the client system. To do this, you must know the MegaRAC G3 card's IP address. If you have installed the MegaRAC G3 on a network that uses DHCP, you can search the network for the MegaRAC G3 card. To locate and find out its IP address, you must run *RacTrendsSeek Locator*.

Note: To get or set the IP address on your MegaRAC G3 card in a Windows 2000/XP environment, you can also run the *G3ConfigApp* program on the host system. See *Appendix B*, *G3ConfigApp* for more information on how to use the *G3ConfigApp* program.

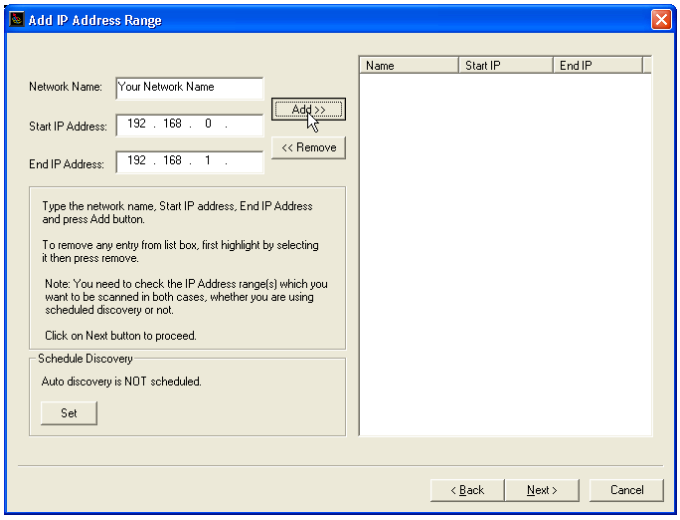
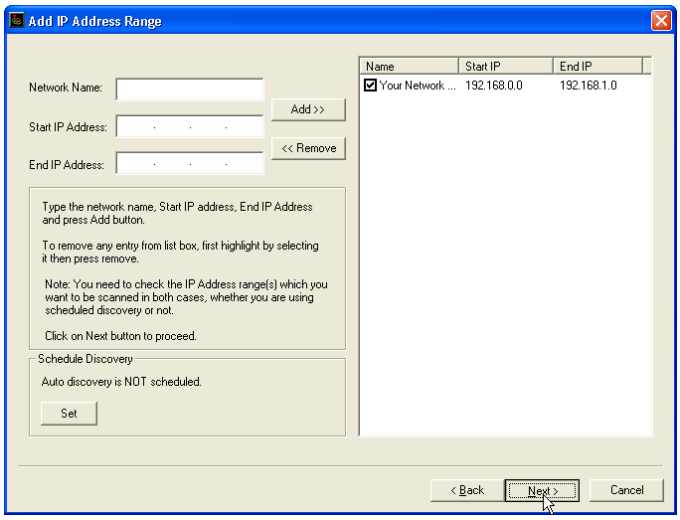
Note: Make sure that you have already installed the MegaRAC G3 *Windows Software Components* on the system that you want to use to locate the MegaRAC G3 card.

Follow the steps in the table below to connect to the MegaRAC G3 from a remote client system:

Step	Description
1	Locate the *RacTrendsSeek Locator* program on your remote client system. Run the *RacTrendsSeek Locator* program by double left clicking on it. 
2	Left click on the *Next* button when you see this screen. 

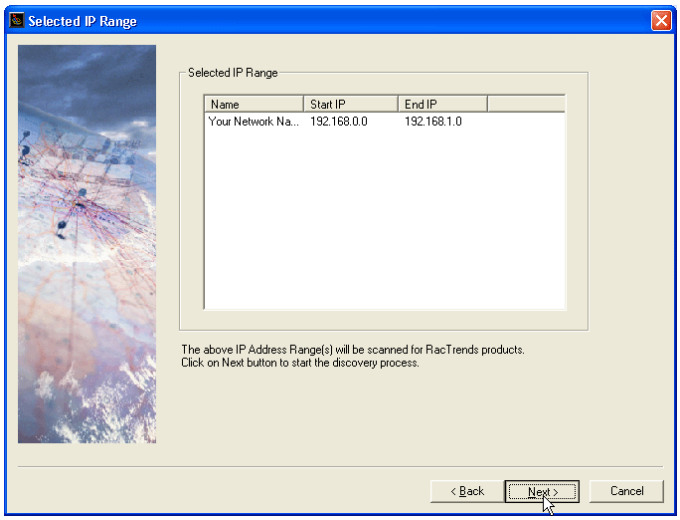
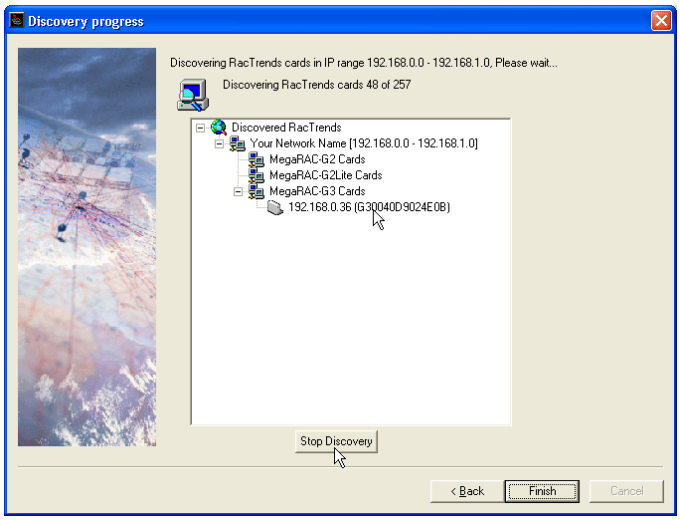
Cont'd

Step 10 Connect to the MegaRAC G3 from a Client System, Continued

Step	Description
3	Type in your *Network Name*. In this example, **`Your Network Name`** is the *Network Name*. Next, you must enter a range of IP addresses that you want to search. In this example, the MegaRAC G3 card's IP address is between 192.168.0.0 to 192.168.1.0. Left click the *Add>>* button when finished. 
4	The name and IP range of the MegaRAC G3 will display in the right field. Place a check in the box next to the range of IP addresses. Left click on the *Next* button. 

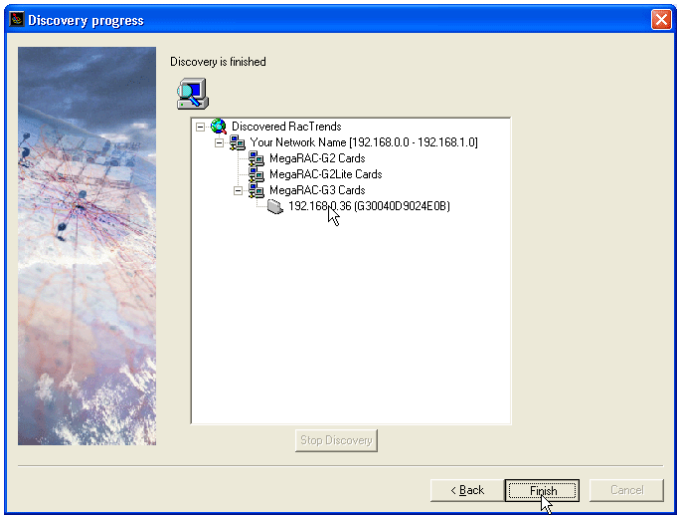
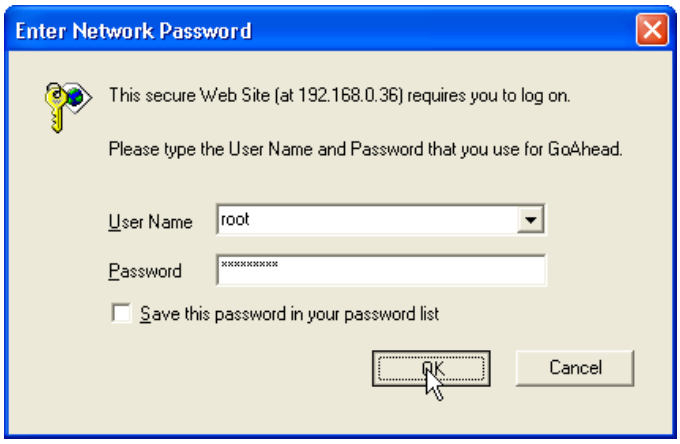
Cont'd

Step 10 Connect to the MegaRAC G3 from a Client System, Continued

Step	Description
5	The name and IP range of the MegaRAC G3 will display in the *Selected IP Range* window. Left click on the *Next* button. 
6	If the IP range is correct, *RacTrendsSeek Locator* will locate the MegaRAC G3 card. It will list all MegaRAC cards it has discovered. **Note:** If more than one MegaRAC G3 card is found, you can distinguish them by the MegaRAC G3 card's name. The MegaRAC G3 card's name consists of the words G3 and the IP address of the MegaRAC G3 card's NIC. 

Cont'd

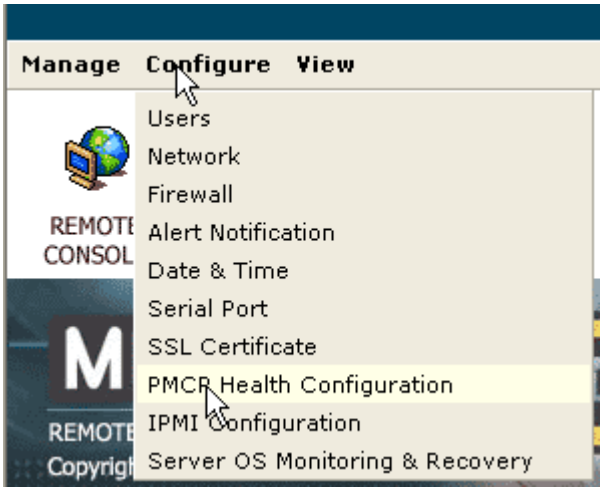
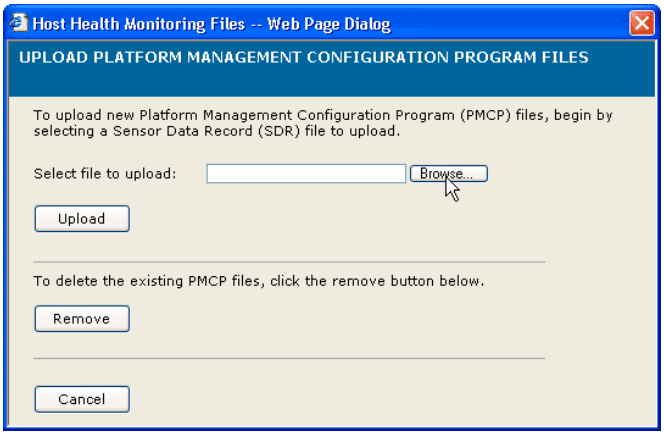
Step 10 Connect to the MegaRAC G3 from a Client System, Continued

Step	Description
7	In this example, the MegaRAC G3 card's IP address is 192.168.0.36. Double left click on the IP address to start managing the MegaRAC G3 card and write down its IP address. Left click on the *Finish* button after *RacTrendsSeek Locator* discovers all MegaRAC cards. 
8	When prompted for the user name and password, enter the following: **Field** / **Default** User Name: `root` Password: `superuser` Left click the *OK* button. After you successfully log into your MegaRAC G3 card, you are greeted with the *Welcome to MegaRAC G3* screen.  **Note:** The default user name and password are in lower-case characters. **Note:** When you log in using the `root` user name and password, you have full administrative powers. It is advised that once you log in, you change the `root` password. See the *Administrator Setup* subsection under the *MegaRAC G3 Configurations* section of this chapter.

Step 11 Load the MegaRAC G3 SDR and Soft Processor (SP) File for Your Server Board Model (OEM VERSION ONLY)

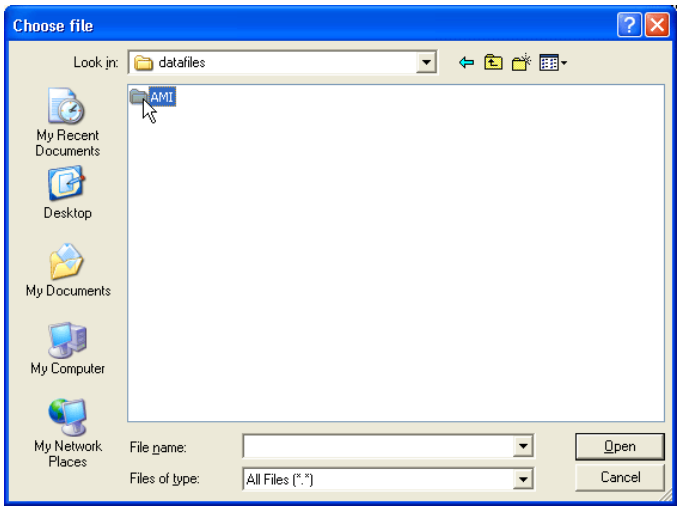
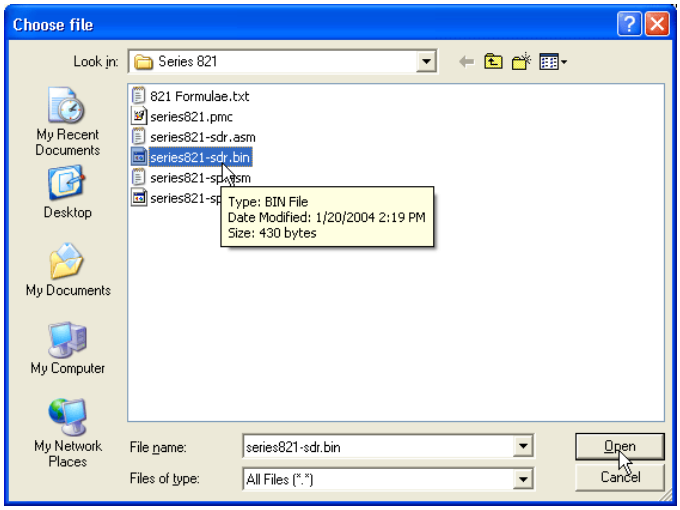
The following table is a pictorial description of how to load an SDR and Soft Processor (SP) File:

Note: *Server Health* is an OEM version feature.

Step	Description
1	The menu bar on the top bar of the GUI has a series of section buttons. Left click on the *Configure* dropdown menu and then left click the *PMCP File Upload* menu item. 
2	The *Host Health Monitoring Files* dialog box opens. Left click the *Browse* button. 

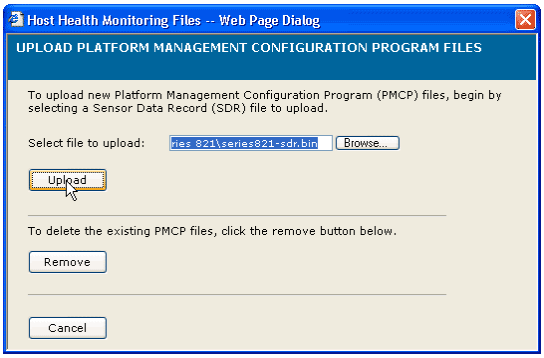
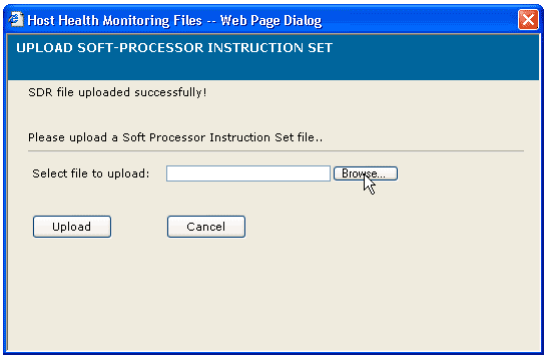
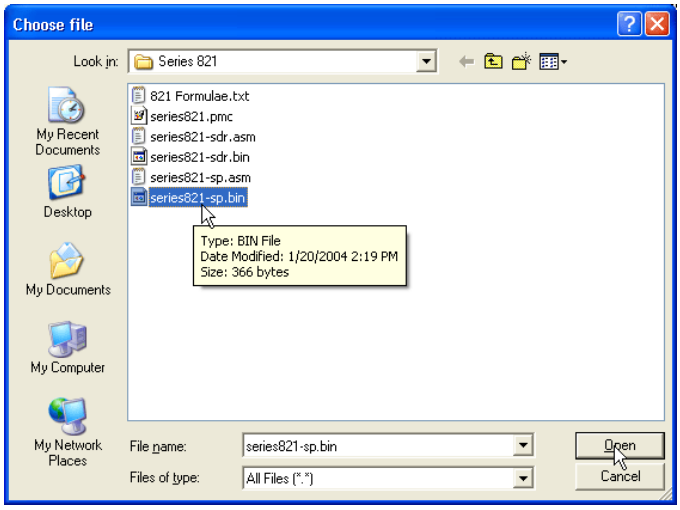
Cont'd

Step 11 Load the MegaRAC G3 SDR and Soft Processor (SP) File for Your Server Board Model (OEM VERSION ONLY), Continued

Step	Description
3	Insert the *MegaRAC™ G3 CD* and browse to it. Select the **`MiscTools>Win32>PMCP>datafiles>`** directory. Select your motherboard manufacturer. In this example, we are using an American Megatrends motherboard, so we will select the **`AMI`** folder.  **Note:** You can create your own SDR and Soft Processor (SP) Files using the *Platform Management Configuration Program (PMCP)* tool. **Note:** The *Choose File* browse window differs from operating system to operating system. However, the procedure is similar.
4	Select the SDR and Soft Processor (SP) File with the **`BIN`** file extension and left click the *Open* button. 

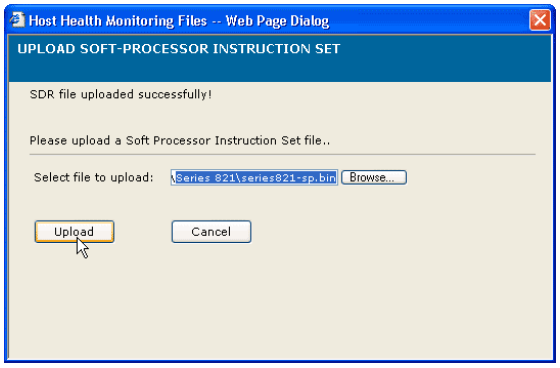
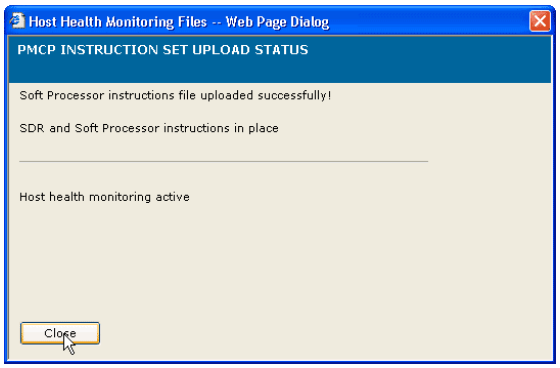
Cont'd

Step 11 Load the MegaRAC G3 SDR and Soft Processor (SP) File for Your Server Board Model (OEM VERSION ONLY), Continued

Step	Description
5	Left click the *Upload* button. 
6	Once the SDR and Soft Processor (SP) File is uploaded, you are prompted with verification that the SDR and Soft Processor (SP) File uploaded. 
7	Select the Soft Processor (SP) file with the **BIN** file extension and left click the *Open* button. 

Cont'd

Step 11 Load the MegaRAC G3 SDR and Soft Processor (SP) File for Your Server Board Model (OEM VERSION ONLY), Continued

Step	Description
8	Left click the *Upload* button. 
9	Once the Soft Processor (SP) file is uploaded, you are prompted with verification that the Soft Processor (SP) file uploaded.  You can close the *Host Health Monitoring Files* dialog box by left clicking the *close* icon on the upper right corner of the dialog box.

Chapter 3 Locating Your MegaRAC G3 Card

Overview

The American Megatrends MegaRAC family of server and system remote management cards can be accessed from anywhere on your Intranet through an Internet browser. This is a great way to maintain your critical server when you are nowhere near it.

This chapter explains how to locate your MegaRAC G3 card on your local network.

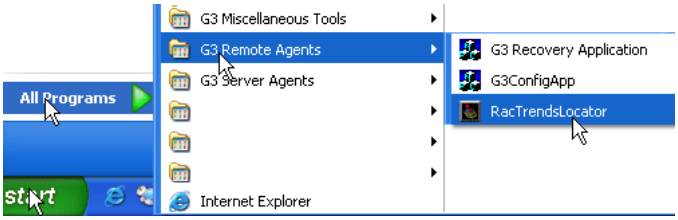
Locating Your MegaRAC G3 Card

In order to connect to the MegaRAC G3 card, you must access the MegaRAC G3 from another system on the same network. This document refers to this other system as the client system. To do this, you must know the MegaRAC G3 card's IP address. If you have installed the MegaRAC G3 on a network that uses DHCP, you can search the network for the MegaRAC G3 card. To locate and find out its IP address, you must run *RacTrendsSeek Locator*.

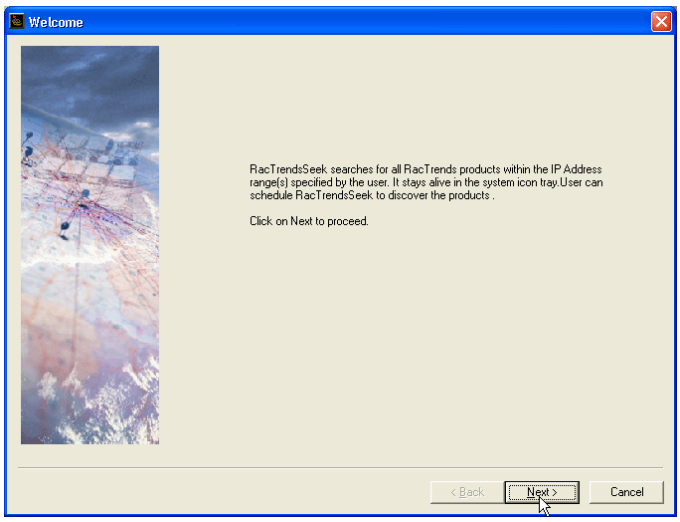
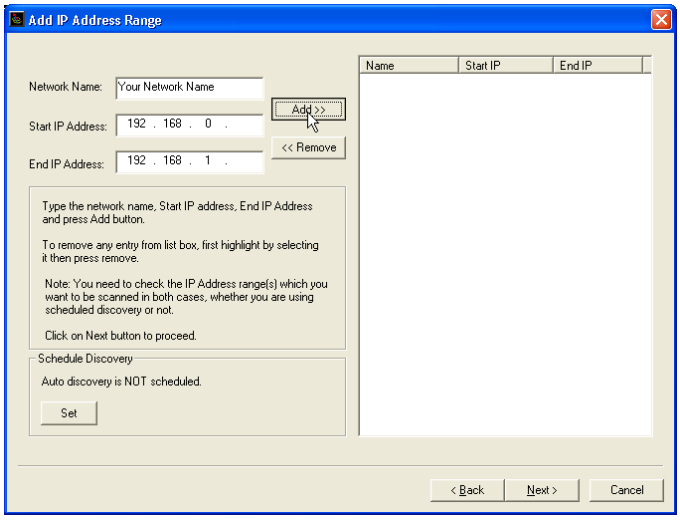
Note: To get or set the IP address on your MegaRAC G3 card in a Windows 2000/XP environment, you can also run the *G3ConfigApp* program on the host system. See *Appendix B*, *G3ConfigApp* for more information on how to use the *G3ConfigApp* program.

Note: Make sure that you have already installed the MegaRAC G3 *Windows Software Components* on the system that you want to use to locate the MegaRAC G3 card.

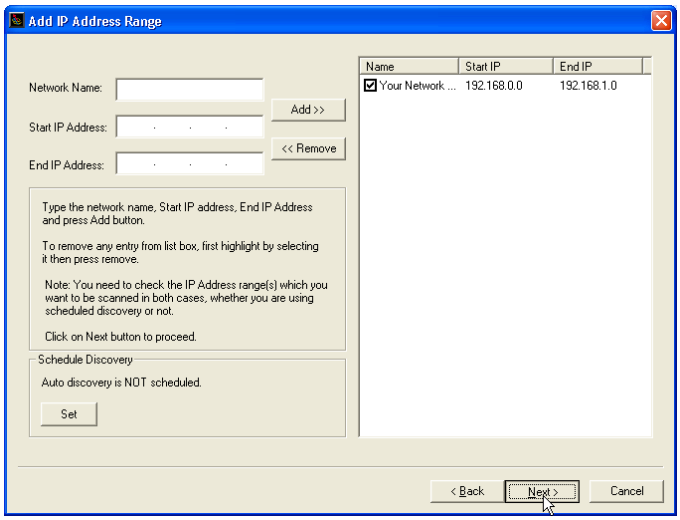
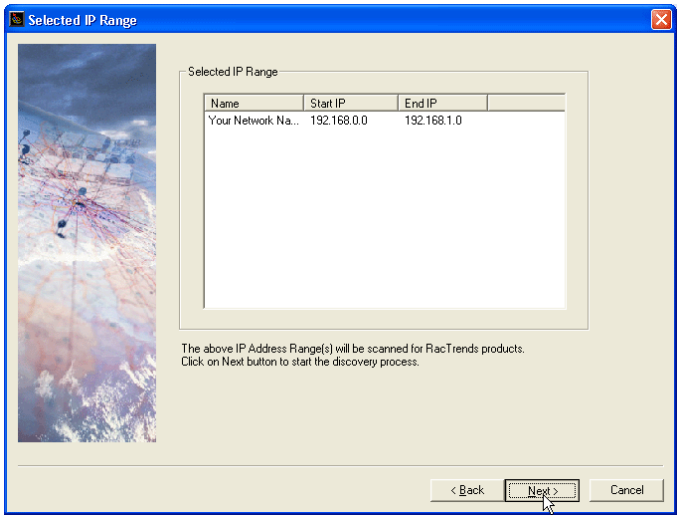
Follow the steps in the table below to connect to the MegaRAC G3 from a remote client system:

Step	Description
1	Locate the *RacTrendsSeek Locator* program on your remote client system. Run the *RacTrendsSeek Locator* program by double left clicking on it. 

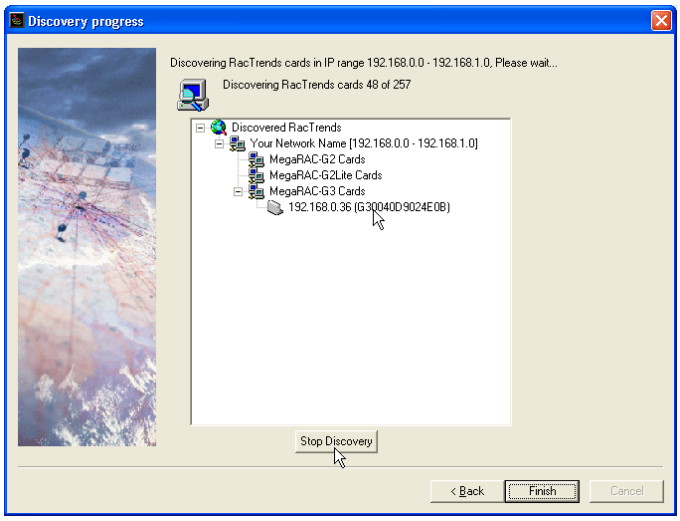
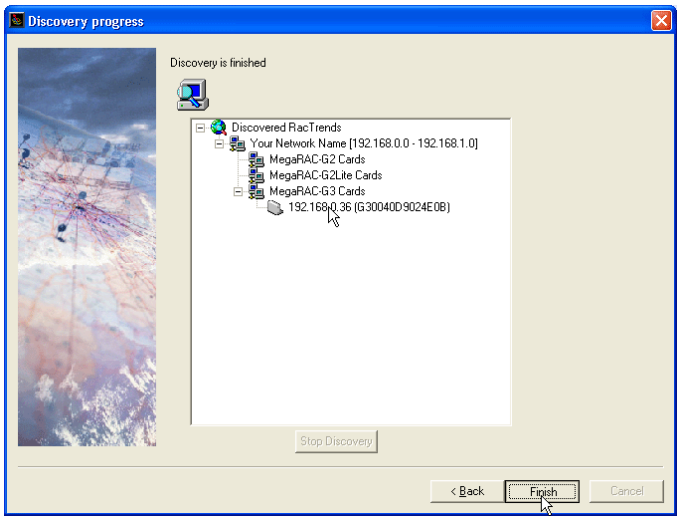
Cont'd

Step	Description
2	Left click on the *Next* button when you see this screen. 
3	Type in your *Network Name*. In this example, **`Your Network Name`** is the *Network Name*. Next, you must enter a range of IP addresses that you want to search. In this example, the MegaRAC G3 card's IP address is between 192.168.0.0 to 192.168.1.0. Left click the *Add*>> button when finished. 

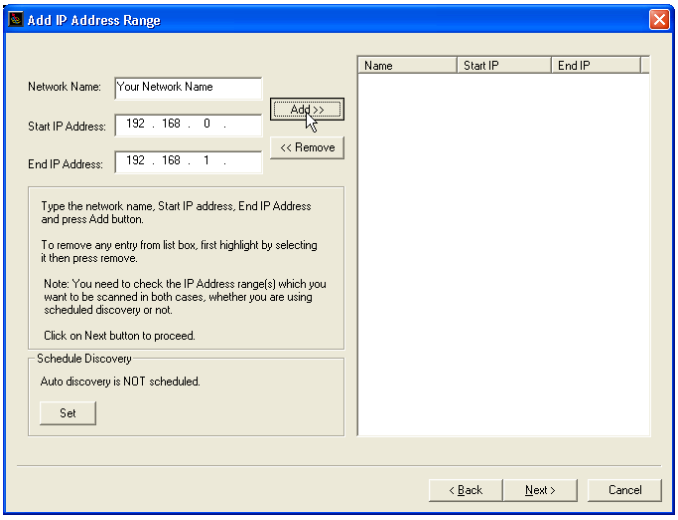
Cont'd

Step	Description
4	The name and IP range of the MegaRAC G3 will display in the right field. Place a check in the box next to the range of IP addresses. Left click on the *Next* button. 
5	The name and IP range of the MegaRAC G3 will display in the *Selected IP Range* window. Left click on the *Next* button. 

Cont'd

Step	Description
6	If the IP range is correct, *RacTrendsSeek Locator* will locate the MegaRAC G3 card. It will list all MegaRAC cards it has discovered. **Note:** If more than one MegaRAC G3 card is found, you can distinguish them by the MegaRAC G3 card's name. The MegaRAC G3 card's name consists of the words G3 and the IP address of the MegaRAC G3 card's NIC. 
7	In this example, the MegaRAC G3 card's IP address is 192.168.0.36. Double left click on the IP address to start managing the MegaRAC G3 card and write down its IP address. Left click on the *Finish* button after *RacTrendsSeek Locator* discovers all MegaRAC cards. 
	Congratulations! You have successfully located your MegaRAC G3 card.

IP Address Range


Add IP Address Range
Network Name:
Your Network Name
Start IP Address:
192 . 168 . 0 .
End IP Address:
192 . 168 . 1 .
Add >>
<< Remove
Name
Start IP
End IP
Type the network name, Start IP address, End IP Address and press Add button.
To remove any entry from list box, first highlight by selecting it then press remove.
Note: You need to check the IP Address range(s) which you want to be scanned in both cases, whether you are using scheduled discovery or not.
Click on Next button to proceed.
Schedule Discovery
Auto discovery is NOT scheduled.
Set
< Back
Next >
Cancel

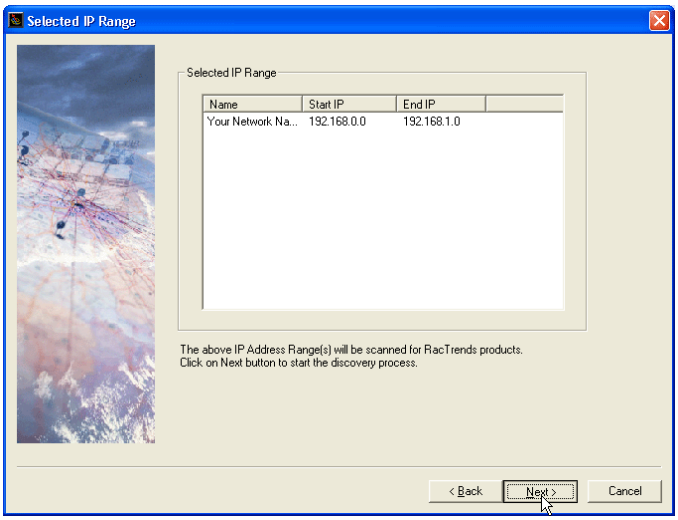
Type in a unique name for this IP range in the *Network Name* field. In this example, `Your Network Name` is the *Network Name*. Next, you must enter a range of IP addresses that you want to search. In this example, the MegaRAC G3 card's IP address is between 192.168.0.0 to 192.168.1.0. Left click the *Add*>> button when finished.

Cont'd

Note: The Start and End IP addresses can be the same if you only wish to scan for one MegaRAC G3 card with that specific IP address.

When you have finished entering all the IP address ranges to be scanned, make sure that they appear correctly in the list box. Confirm that the checkbox next to the IP range you want to search is checked.

At this point, you have two options. You can choose to run the scan immediately by left clicking on the *Next* button, or you can select to schedule the discovery to run at specific times and intervals: daily, weekly, monthly or never.

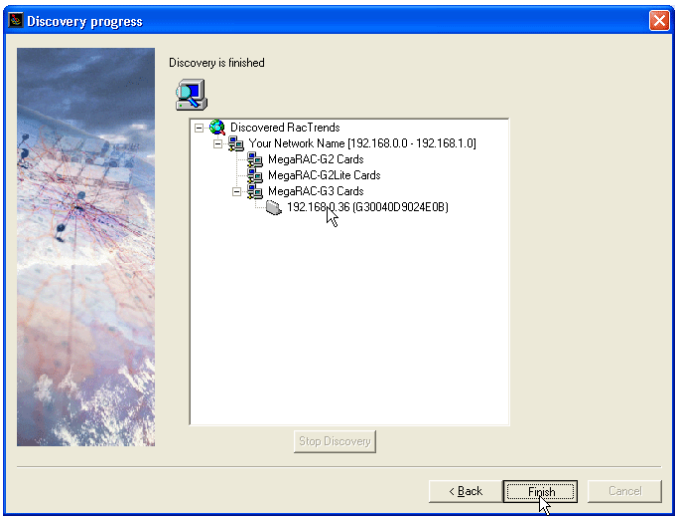


The name and IP range of the MegaRAC G3 card will display in the *Selected IP Range* window. Left click on the *Next* button.

Cont'd

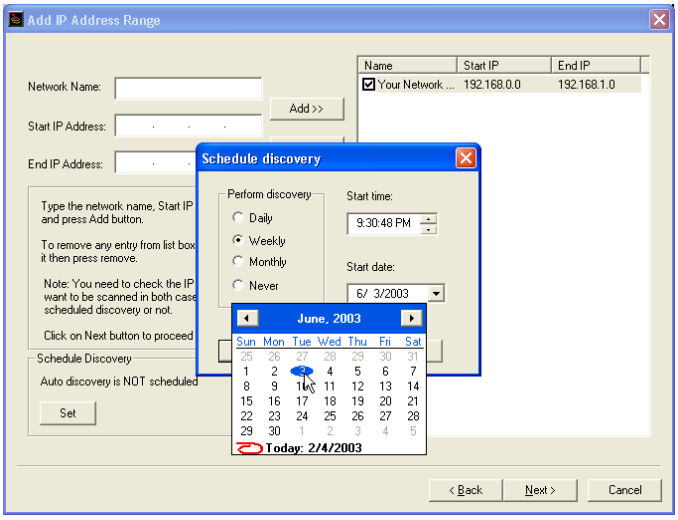
IP Address Range, Continued

If the IP range is correct, *RacTrendsSeek Locator* locates all MegaRAC cards. It lists all MegaRAC G3 cards it has discovered. Left click on the *Finish* button after *RacTrendsSeek Locator* discovers all MegaRAC G3 cards.



Schedule Discovery

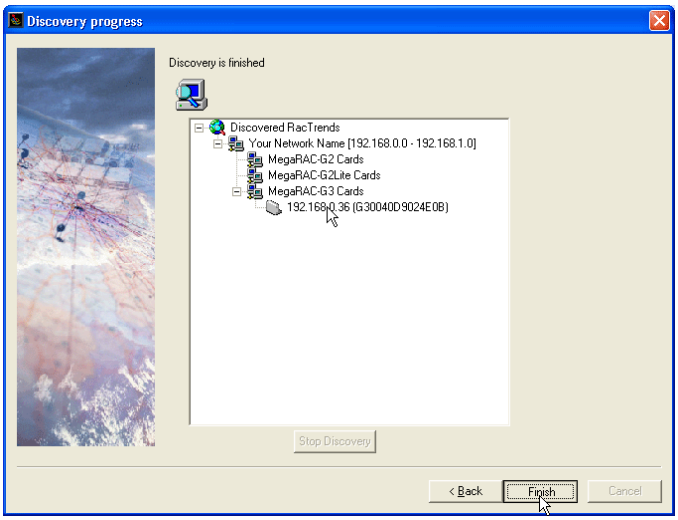
To schedule a scan, left click on the *Set* button in the *Schedule Discovery* box.



Select scanning frequency desired and start time and date. Left click on the *OK* button. Make sure that the IP address ranges to be scanned are checked. Left click the *Cancel* button to close that page. Left click on the *Finish* button to close the Installation Wizard. *Schedule Discover* will start at the scheduled time on those specified IP addresses ranges.

Usage

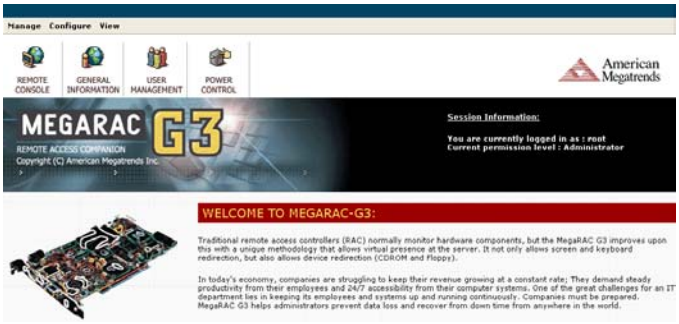
Once the program has been installed and setup, you can access it any time by double left clicking on its icon on the task bar. The screen that was last viewed will appear.



Note: To close the *RacTrendsSeek Locator* utility you must right click on the *RacTrendsSeek Locator* icon from the task bar and left click the *Exit* menu option.

Chapter 4 Using Your MegaRAC G3

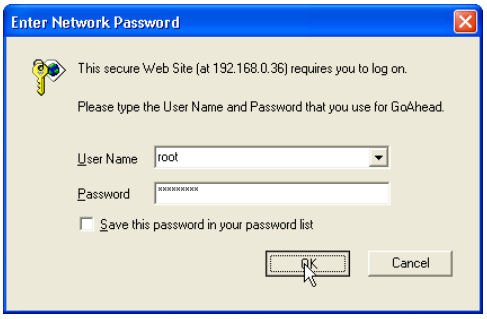
MegaRAC G3 GUI Overview



The MegaRAC G3 has a user-friendly Graphics User Interface (GUI) called the *MegaRAC G3 GUI*. It is designed to be easy to use. It has a low learning curve because it uses a standard Internet browser. You can expect to be up and running in less than five minutes.

This chapter allows you to become familiar with the *MegaRAC G3 GUI*'s various functions. Each function is described in detail.

Default User Name and Password


Enter Network Password
This secure Web Site (at 192.168.0.36) requires you to log on.
Please type the User Name and Password that you use for GoAhead.
User Name
root
Password
Save this password in your password list
OK
Cancel

When you first try to access your MegaRAC G3, you will be prompted to enter a user name and password. The default user name and password are as follows:

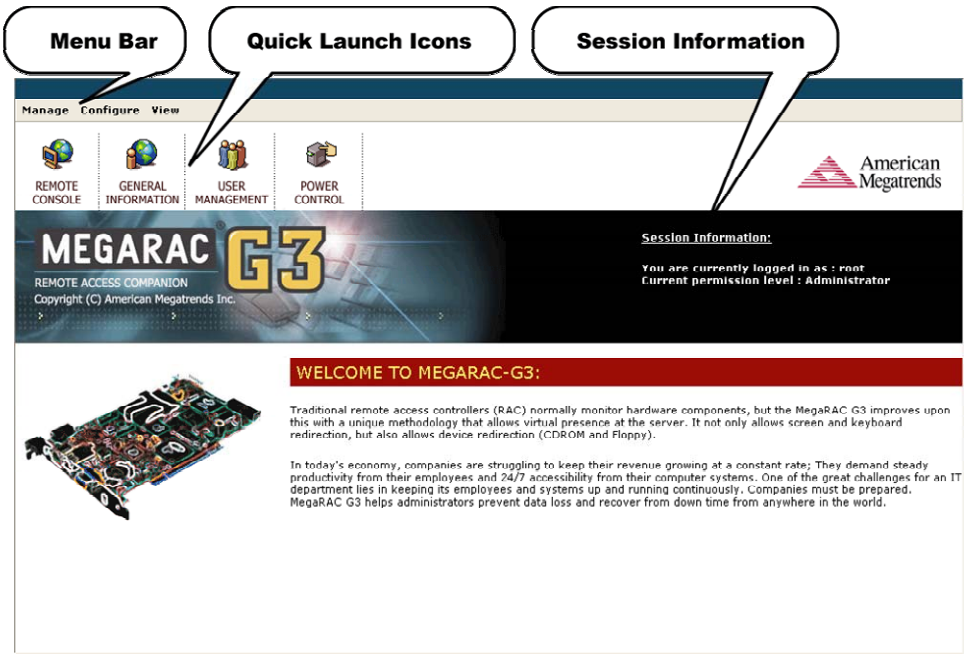
Field	Default
User Name	**root**
Password	**superuser**

Note: The default user name and password are in lower-case characters.

Note: When you log in using the `root` user name and password, you have full administrative powers. It is advised that once you log in, you change the `root` password.

MegaRAC G3 GUI Explained

After you successfully log into your MegaRAC G3, you are greeted with the *MegaRAC G3 GUI*.


Menu Bar
Quick Launch Icons
Session Information
Manage Configure View
REMOTE CONSOLE
GENERAL INFORMATION
USER MANAGEMENT
POWER CONTROL
American Megatrends
MEGARAC G3
REMOTE ACCESS COMPANION
Copyright (C) American Megatrends Inc.
Session Information:
You are currently logged in as : root
Current permission level : Administrator
WELCOME TO MEGARAC-G3:
Traditional remote access controllers (RAC) normally monitor hardware components, but the MegaRAC G3 improves upon this with a unique methodology that allows virtual presence at the server. It not only allows screen and keyboard redirection, but also allows device redirection (CDROM and Floppy).
In today's economy, companies are struggling to keep their revenue growing at a constant rate; They demand steady productivity from their employees and 24/7 accessibility from their computer systems. One of the great challenges for an IT department lies in keeping its employees and systems up and running continuously. Companies must be prepared. MegaRAC G3 helps administrators prevent data loss and recover from down time from anywhere in the world.

Menu Bar

There is a menu bar located at the top of the *MegaRAC G3 GUI*. It lists the following groups:

- Manage Group
- Configure Group
- View Group

You can navigate the menu bar by left clicking on one of the menu items. A drop down menu will appear for each Group.

Manage Configure View
Remote Console
Remote Power Control
Upgrade Firmware
Reset MegaRAC-G3
High color quality (16-bit) for fast/LAN connection
Low color quality (8-bit) for fast/LAN connection
Low color quality (8-bit) for slow/WAN/DSL connection

Cont'd

Quick Launch Icons

There is a quick launch icon section located on the upper area of the *MegaRAC G3 GUI*. It lists the following icons:

- Remote Console
- General Information
- User Management
- Power Control

You can navigate these icons with your mouse (or other pointing device) and select them by left clicking on one of the icons.

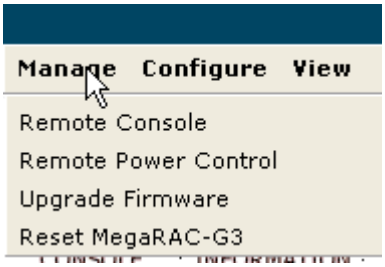
Session Information

This section of the *MegaRAC G3 GUI* allows you to view your user name and permission level.

```
Session Information

You are currently logged in as: root
Current permission level: Administrator
```

Manage Group



You can left click on the *Manage* menu item from the menu bar. The following table gives you a brief description of each menu item. Each menu item is explained in more detail further in this section.

Function	Description
Remote Console	This menu item allows you to start a Remote Console session with the host system.
Remote Power Control	This menu item allows you to power on, power off, power cycle, and reset the host system.
Upgrade Firmware	This menu item allows you to update your MegaRAC G3's firmware.
Reset MegaRAC G3	This menu item allows you to reset your MegaRAC G3 card.

Remote Console

Remote Console is a subsection of the *Manage* group. The following table describes the information listed in this subsection in detail:

Item	Description
High Color Quality (16-bit) for fast/LAN Connection	This option allows the MegaRAC G3 to send 16 bits per pixel color. This setting is recommended for faster connection speeds or over a LAN connection.
Low Color Quality (8-bit) for fast/LAN Connection	This option allows the MegaRAC G3 to send 8 bits per pixel color. This setting is recommended for lower connection speeds or over a WAN connection. When using *Low Color Quality (8-bit) for fast/LAN Connection*, you can opt not to use software compression. Compression can increase the frame rates. Best used for slower connections.
Low Color Quality (8-bit) for slow/WAN/DSL Connection	This option allows the MegaRAC G3 to send 8 bits per pixel color. This setting is recommended for lower connection speeds or over a WAN connection. When using *Low Color Quality (8-bit) for slow/WAN/DSL Connection*, you can also use software compression. Compression can increase the frame rates. Best used for slower connections, such as DSL.

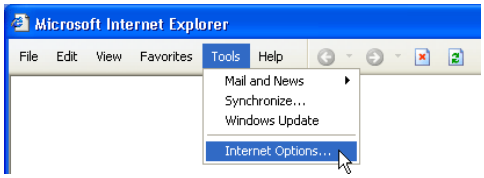
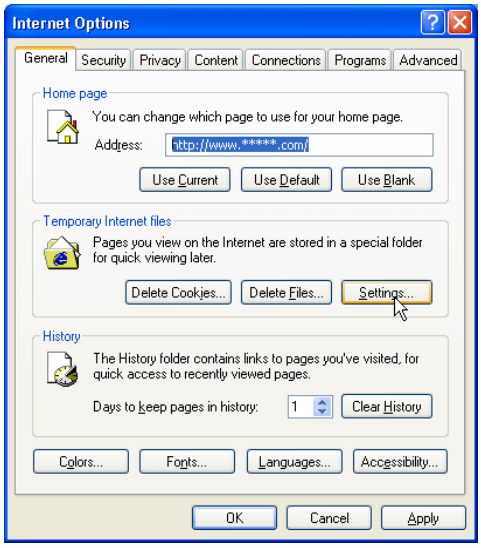
Note: The *Low Color Quality (8-bit) for slow/WAN/DSL Connection* mode is recommended for low speed connections such as those over a Wide Area Network or home DSL. If you are connecting over a LAN at high speeds you can use *High Color Quality (16-bit) for fast/LAN Connection* mode. In order to change modes you must stop redirection, close the browser, and reconnect in the appropriate mode.

Redirection

The most powerful feature of your MegaRAC G3 is the ability to redirect the host system's console. To redirect the host system's console is the ability to manage your host system as if it were physically in front of you, but not.

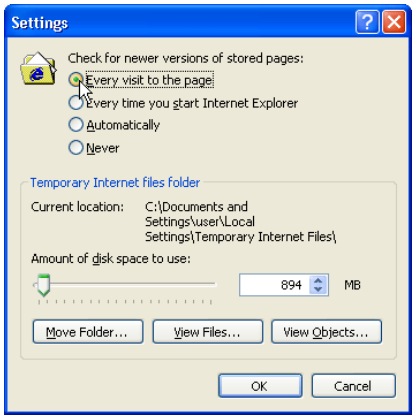
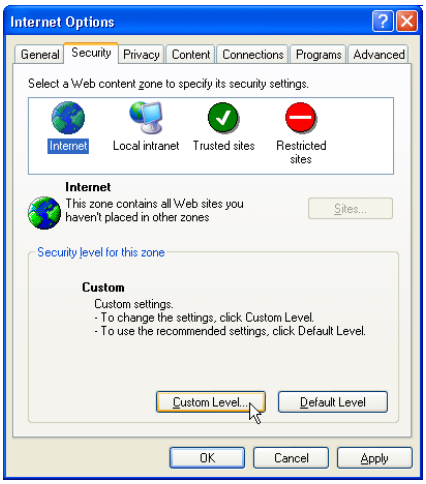
Setting up Internet Explorer

You must first setup your Internet browser before you can redirect the host system's console.

Step	Description
1	Open *Internet Options*. To get there, open your Internet Explorer browser, left click *Tools* and then *Internet Options*. 
2	The *Internet Options* window opens. Left click the *Settings* button. 

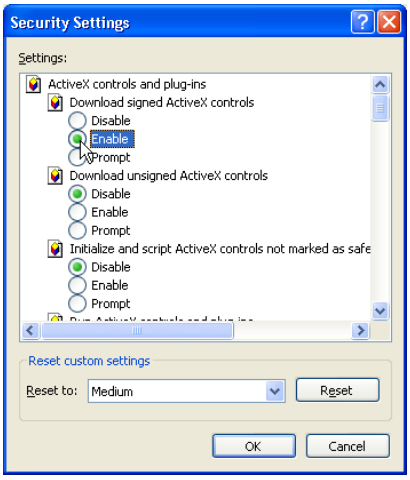
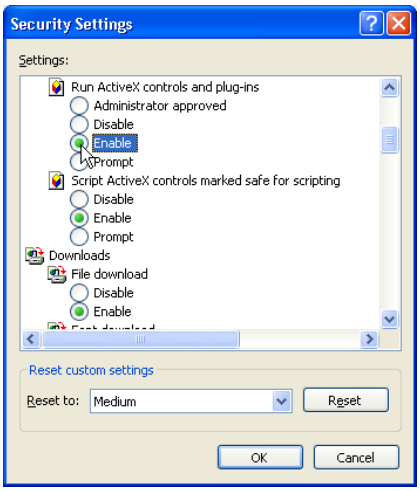
Cont'd

Setting up Internet Explorer, Continued

Step	Description
3	The *Settings* window opens. Left click the *Every visit to the page* button or *Automatically* button. Left click the *OK* button to apply the change and to go back to the *Internet Options* window.  **Note:** Other settings can cause old data to be displayed when performing operations on the MegaRAC G3.
4	Next, you must setup Internet Explorer to allow the downloading of Signed ActiveX controls and also allow it to run Signed ActiveX controls. To do this, left click the *Security* tab and then the *Custom Level* button.  **Note:** In Microsoft Windows 2003 server operating systems, the default security setting is *High*, and this disables many items (besides the Active X ones mentioned in this document) that are necessary to even access the MegaRAC GUI. The security settings for a Microsoft Windows 2003 server operating system remote client must be on *Medium* or *Low*.

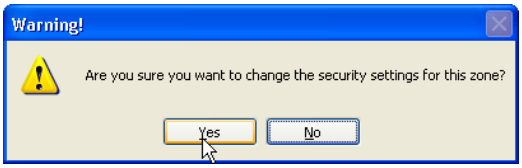
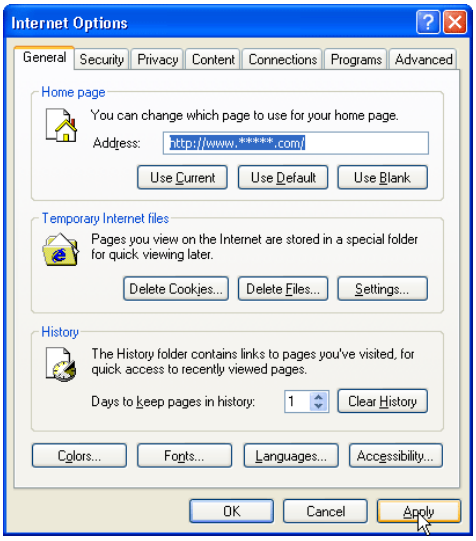
Cont'd

Setting up Internet Explorer, Continued

Step	Description
5	The *Security Settings* window opens. Left click the *Enable* button under the *Download signed ActiveX controls* section. 
6	Scroll down and left click the *Enable* button under the *Run ActiveX controls and plug-ins* section. Left click the *OK* button. 

Cont'd

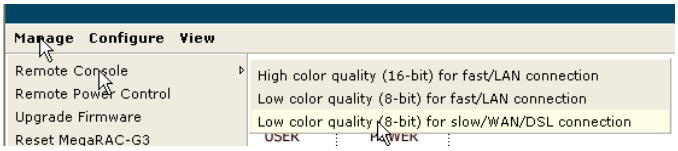
Setting up Internet Explorer, Continued

Step	Description
7	You are prompted with a *Warning* window. Left click the *Yes* button to accept the changes to the Internet zone and to go back to the *Internet Options* window. 
8	Left click the *Apply* button and then the *OK* button to make the changes.  **Note:** You must restart Internet Explorer before the changes take effect. **Note:** *Remote Console* cannot run with any other security settings in Internet Explorer.

Cont'd

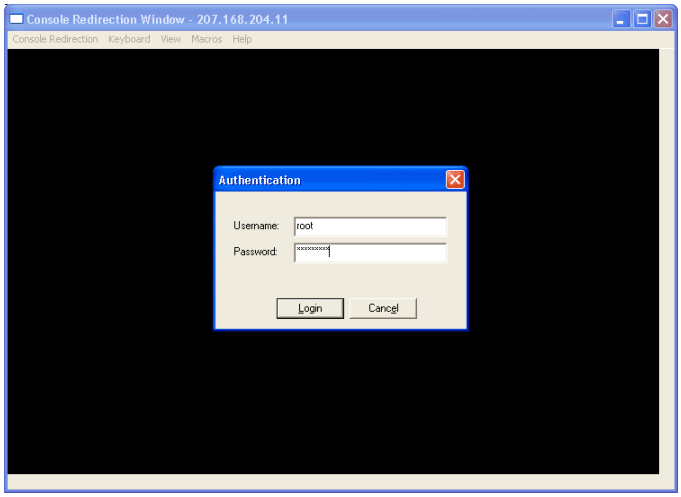
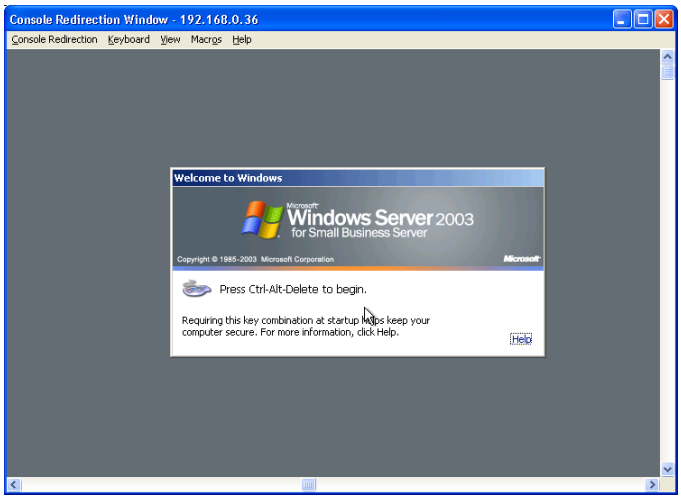
Staring Redirection

Follow the steps in the table below to begin *Console Redirection*:

Step	Description
1	Left click the Manage menu item from the MegaRAC G3 menu bar. Left click the Remote Console menu item from the drop down menu. Left click the Remote Console mode that you want to use. 
2	The *MegaRAC G3 Console Redirection* status window opens.

Cont'd

Staring Redirection, Continued

Step	Description
3	The *Authentication* window opens. Type your *Username* and *Password* and click the *Login* button. 
4	The *Console Redirection* window opens. 

Cont'd

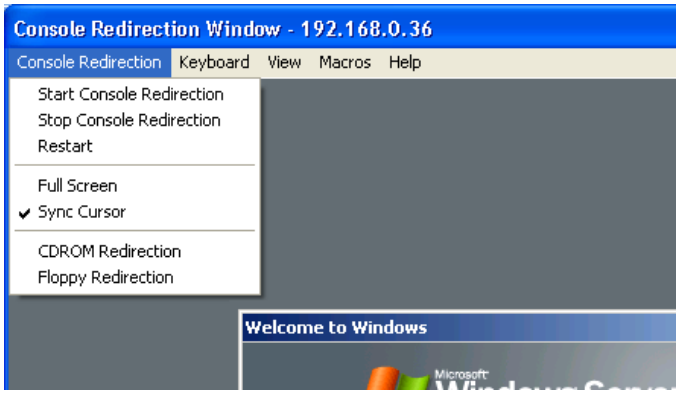
Remote Console Shortcut Key Combinations

The most powerful feature of your MegaRAC G3 is the ability to redirect the host system's console. To redirect the host system's console is the ability to manage your host system as if it were physically in front of you, but not. The following table is a list of basic keystrokes and their functions:

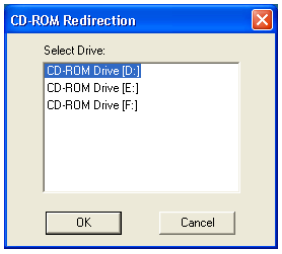
Keystroke	Description
<ATL> + <S>	Start Console Redirection
<ATL> + <T>	Stop Console Redirection
<ATL> + <R>	Restart Console Redirection
<ATL> + <F>	Toggle Full Screen Mode
<ATL> + <M>	Synchronize Mouse
<ATL> + <A>	Hold/Unhold Right <ATL> Key
<ATL> + <B>	Hold/Unhold Left <ATL> Key
<ATL> + <L>	Hold/Unhold Right <CTRL> Key
<ATL> + <N>	Hold/Unhold Left <CTRL> Key
<ATL> + <D>	Generate <CTRL>, <ATL>, + <DEL>
<ATL> + <E>	Start CD-ROM Drive Redirection
<ATL> + <P>	Start Floppy Drive Redirection

Cont'd

Console Redirection Window

<table>
<tr><th>Dropdown Menu Item</th><th colspan="2">Description</th></tr>
<tr><td>Console Redirection</td><td colspan="2"> 

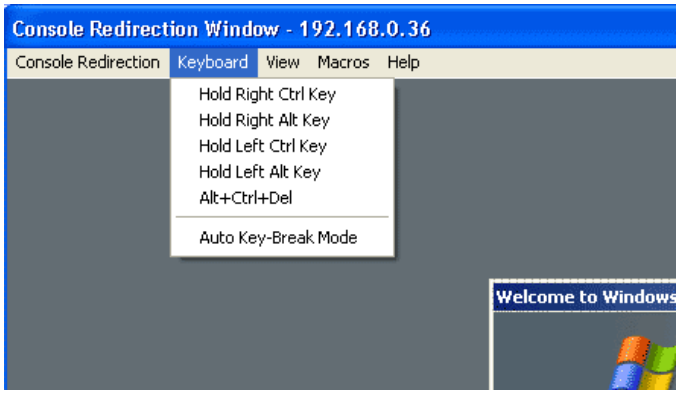
This dropdown menu contains the following dropdown menu items:
<table>
<tr><td>Start Console Redirection</td><td>This menu item can be used to begin Console Redirection.</td></tr>
<tr><td>Stop Console Redirection</td><td>This menu item can be used to halt Console Redirection.</td></tr>
<tr><td>Restart</td><td>This menu item can be used to stop Console Redirection and then start Console Redirection again.</td></tr>
<tr><td>Full Screen</td><td>This menu item can be used to view the Console Redirection in Full Screen mode.

Note: Set your client system's screen resolution to 1024 x 768 so that you can view the host system in true full screen.</td></tr>
<tr><td>Sync Cursor</td><td>This menu item can be used to synchronize or unsynchronize the mouse cursor.</td></tr>
<tr><td>CDROM Redirection</td><td>This menu item can be used to start or stop the redirection of the CD-ROM drive.
 
</td></tr>
<tr><td>Floppy Redirection</td><td>This menu item can be used to start or stop the redirection of the floppy drive.

Note: Floppy Redirection is not an available feature on all versions of the MegaRAC G3 cards.</td></tr>
</table>
</td></tr>
</table>

Cont'd

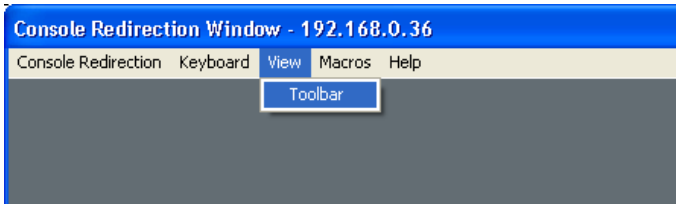
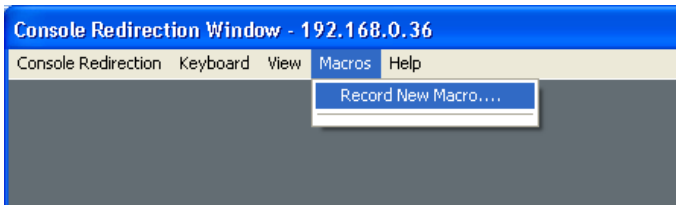
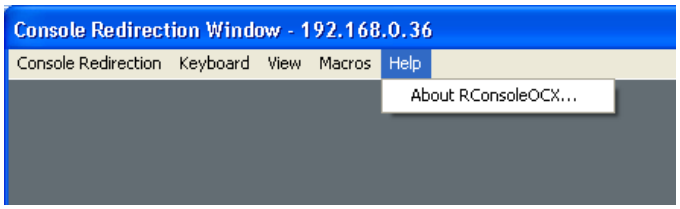
Console Redirection Window, Continued

<table>
<tr><th>Dropdown Menu Item</th><th>Description</th></tr>
<tr><td>Keyboard</td><td>


This dropdown menu contains the following dropdown menu items:
<table>
<tr><td>Hold Right CTRL Key</td><td>This menu item can be used to act as the right-side <CTRL> key when in Console Redirection.</td></tr>
<tr><td>Hold Right ALT Key</td><td>This menu item can be used to act as the right-side <ALT> key when in Console Redirection.</td></tr>
<tr><td>Hold Left CTRL Key</td><td>This menu item can be used to act as the left-side <CTRL> key when in Console Redirection.</td></tr>
<tr><td>Hold Left ALT Key</td><td>This menu item can be used to act as the left-side <ALT> key when in Console Redirection.</td></tr>
<tr><td>ALT+CTRL+DEL</td><td>This menu item can be used to act as if you depressed the <CTRL>, <ALT> and <DEL> keys down simultaneously on the host system that you are redirecting.</td></tr>
<tr><td>Auto Key-Break Mode</td><td>This menu item must be enabled when USB keyboard emulation is used. The MegaRAC G3 does not use USB keyboard emulation. Instead, the MegaRAC G3 uses legacy PS/2 emulation. This feature is used to avoid repeated keystrokes over slow connections. This menu item will be removed from all future MegaRAC G3 firmware releases.</td></tr>
</table>
</td></tr>
</table>

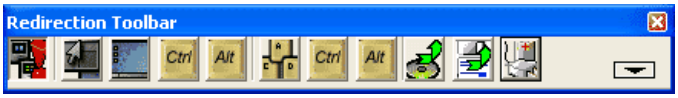
Cont'd

Console Redirection Window, Continued

Dropdown Menu Item	Description
View	This dropdown menu item contains the *Toolbar* menu item that allows you to start the *Console Redirection* toolbar.  The following window is a screen capture of the *Console Redirection* toolbar.
Macros	This dropdown menu item contains the *Record New Macro* menu item that allows you to record a set of keystrokes. A good example is when using the MegaRAC G3 in conjunction with a KVM. Normally, you must use a key sequence to switch systems. If you programmed a macro, you would be able to switch systems by selecting a preprogrammed macro. 
Help	This dropdown menu item contains the *About RConsoleOCX Control* menu item that allows you to view the *RConsoleOCX Control* version number and copyright information. 

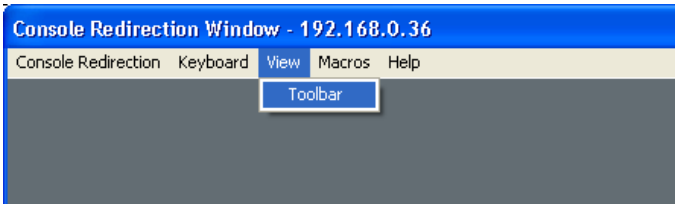
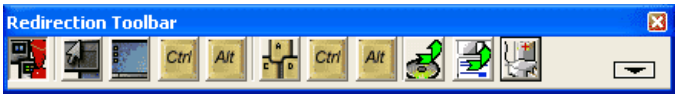
Cont'd

Console Redirection Toolbar



The *Console Redirection* toolbar allows you to use *Console Redirection* more easily in full screen mode. The *Console Redirection* toolbar is a great GUI to use especially if you are not familiar with the shortcut key combinations.

Follow the steps in the table below to begin the *Console Redirection* toolbar:

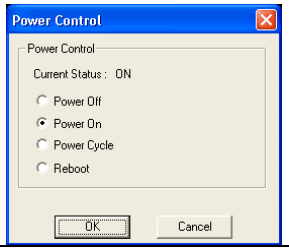
Step	Description
1	Left click the *View* dropdown menu. The dropdown menu will open. Left click on the *Toolbar* menu item. 
2	The *Console Redirection* toolbar will open.  **Note:** You can left click the down arrow to see the Console Redirection Status information.

Console Redirection Toolbar Status

Status Item	Description
Compression	This field displays if you are using compression or not.
Resolution	This field displays if you are using high or low color mode during your redirection.
Frame Rate	This field displays the current frame rate you are getting.
Active Clients	This field displays how many users are currently accessing the MegaRAC G3.

Cont'd

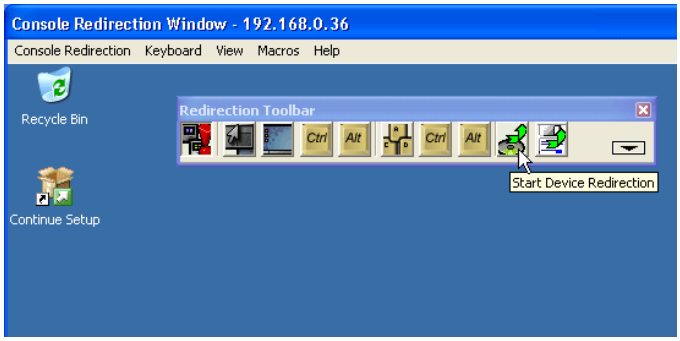
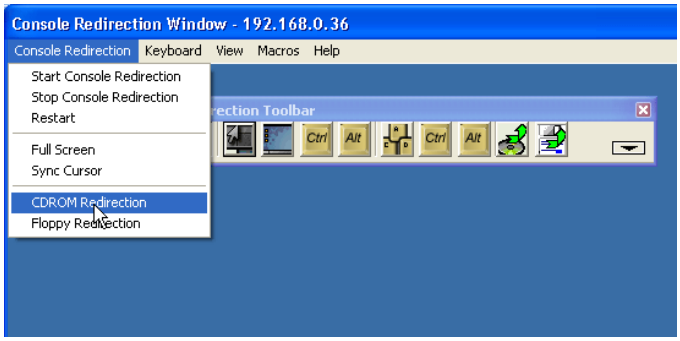
Console Redirection Toolbar Toggle Buttons

Icon	Description
	When you see this icon, it means that the *Console Redirection* is on. You can left click this icon to stop *Console Redirection*.
	When you see this icon, it means that *Console Redirection* is stopped. You can left click this icon to start *Console Redirection*.
	Left click to start mouse synchronization or press the <ALT> <M> keys.
	Left click to stop mouse synchronization or press the <ALT> <M> keys.
	Left click to view the redirected host system's console in full screen mode. **Note:** Set your client system's screen resolution to 1024 x 768 so that you can view the host system in true full screen.
	Left click to view the redirected host system's console in a window.
	Left click to toggle the use of the <CTRL> key.
	Left click to toggle the use of the <ALT> key.
	Left click to use the <CTRL> <ALT> <DEL> keys together.
	When you see this icon, it means that CD-ROM device redirection is stopped. You can left click this icon to start CD-ROM redirection.
	When you see this icon, it means that CD-ROM redirection is currently on. You can left click this icon to stop CD-ROM redirection.
	When you see this icon, it means that floppy device redirection is stopped. You can left click this icon to start floppy redirection. **Note:** *Floppy Redirection* is not an available feature on all versions of the MegaRAC G3 cards.
	When you see this icon, it means that floppy redirection is currently on. You can left click this icon to stop floppy redirection. **Note:** *Floppy Redirection* is not an available feature on all versions of the MegaRAC G3 cards.
	Left click this icon to *Power Control* screen. 

Cont'd

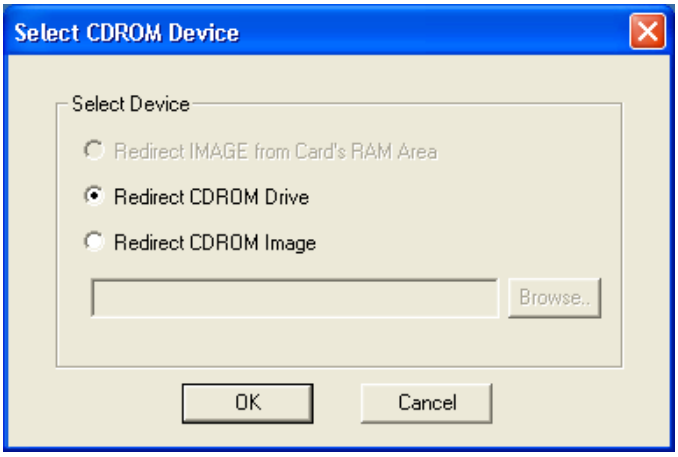
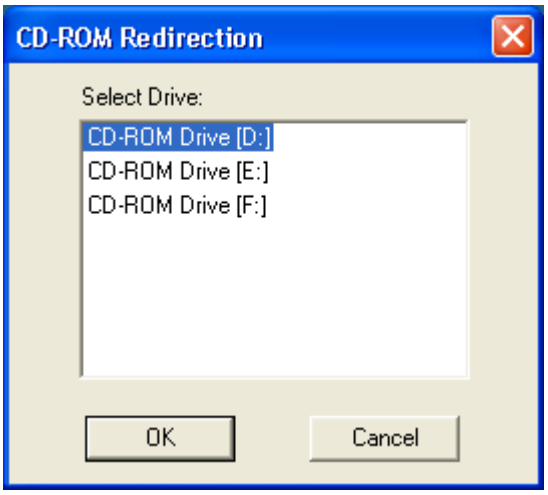
Start CD-ROM Drive Redirection

Follow the steps in the table below to begin the CD-ROM Drive Redirection:

Step	Description
1	There are two ways to start the *CD-ROM Drive Redirection*. One way is to use the *Console Redirection* toolbar.  The second way is to use the *CDROM Redirection* dropdown menu. 

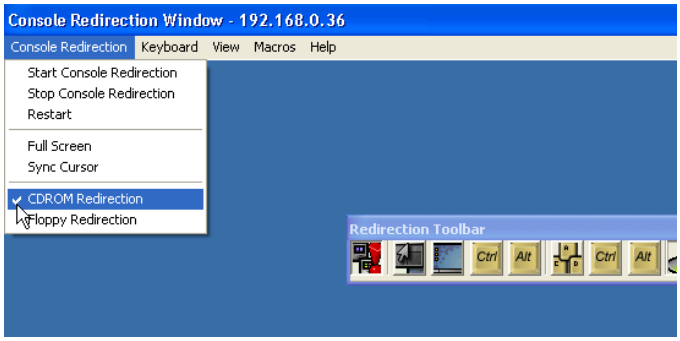
Cont'd

Start CD-ROM Drive Redirection, Continued

Step	Description
2	Select whether you want to redirect the CD-ROM drive or a CD image file. Left click the *OK* button. 
3	Select the *CD-ROM Drive* you want to redirect. Left click the *OK* button. *CD-ROM Drive Redirection* will begin immediately. 

Cont'd

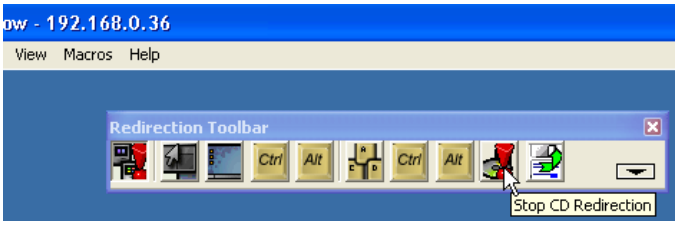
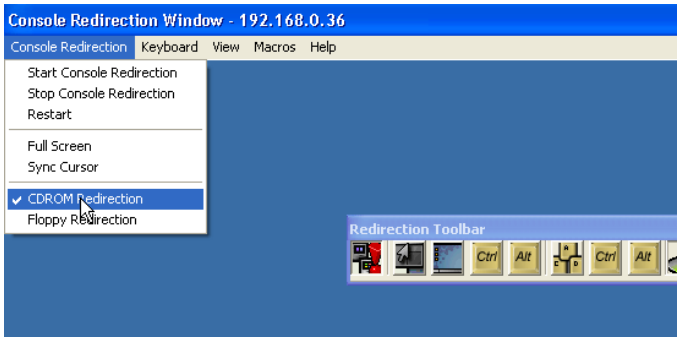
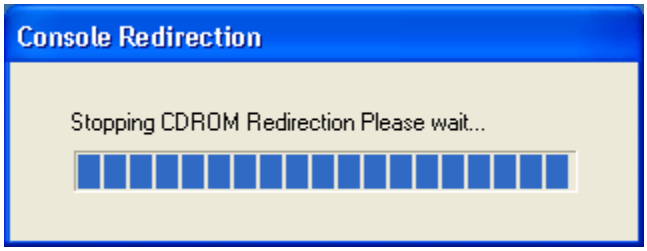
Start CD-ROM Drive Redirection, Continued

Step	Description
4	If you used the *Console Redirection* toolbar to start the *CD-ROM Drive Redirection*, you will see the following: Notice that the *CDROM Drive Redirection* icon changes. If you used the dropdown menu, there is a check next to the *CDROM Redirection* menu item. 

Cont'd

Stop CD-ROM Drive Redirection

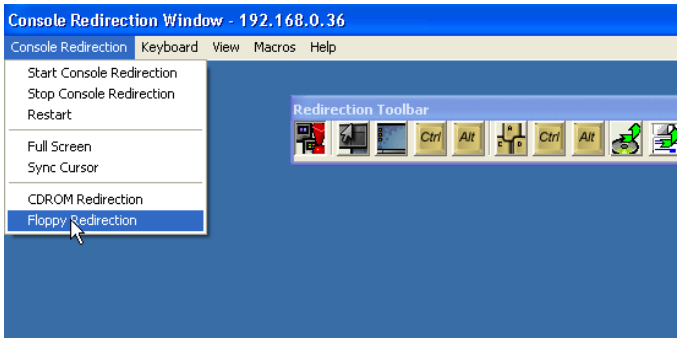
Follow the steps in the table below to stop the CD-ROM Drive Redirection:

Step	Description
1	There are two ways to stop the *CD-ROM Drive Redirection*. One way is to use the *Console Redirection* toolbar. Simply left click the *CD-ROM Drive Redirection* icon.  The second way is to use the *Console Redirection* dropdown menu. Left click the *Console Redirection* dropdown menu. You will notice a check next to the *CDROM Redirection* menu item. Left click the *CDROM Redirection* menu item to stop the *CD-ROM Drive Redirection*. 
2	The *Console Redirection* status dialog box appear as it stops device redirection. 

Cont'd

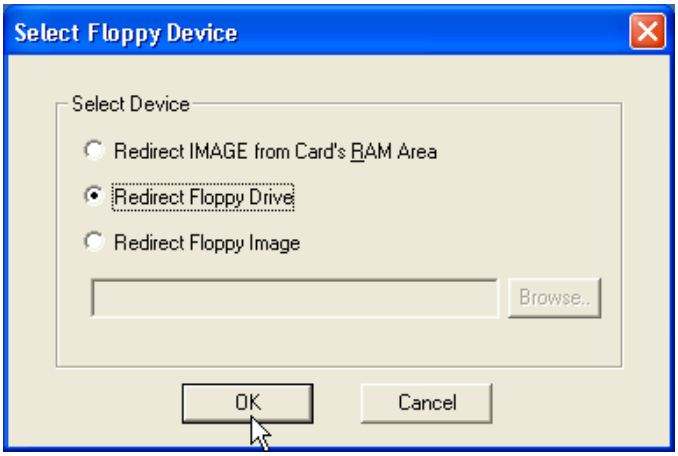
Start Floppy Drive Redirection

Follow the steps in the table below to begin the Floppy Drive Redirection:

Step	Description
1	There are two ways to start the *Floppy Drive Redirection*. One way is to use the *Console Redirection* toolbar. The second way is to use the *Floppy Redirection* dropdown menu. 

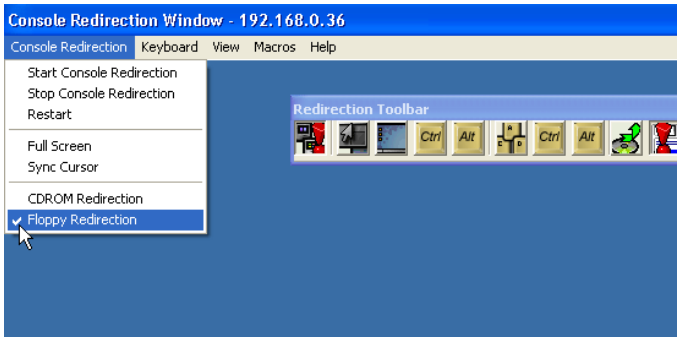
Cont'd

Start Floppy Drive Redirection, Continued

Step	Description
2	Select whether you want to redirect the floppy drive or a floppy image file. Left click the *OK* button. 
3	Select the *Floppy Drive* you want to redirect. Left click the *OK* button. *Floppy Drive Redirection* will begin immediately.

Cont'd

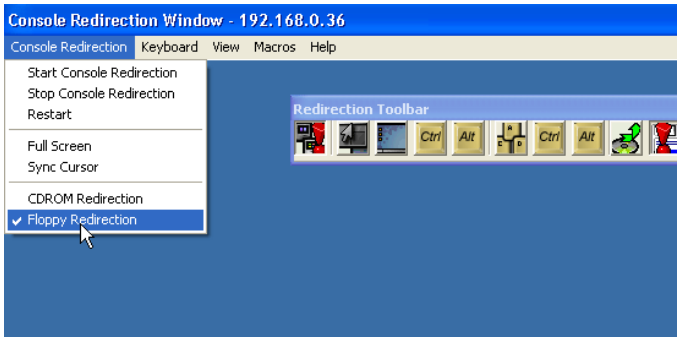
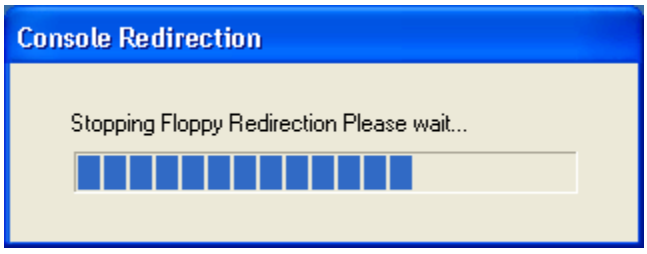
Start Floppy Drive Redirection, Continued

Step	Description
4	If you used the *Console Redirection* toolbar to start the *Floppy Drive Redirection*, you will see the following: Notice that the *Floppy Drive Redirection* icon changes. If you used the dropdown menu, there is a check next to the *Floppy Redirection* menu item. 

Cont'd

Stop Floppy Drive Redirection

Follow the steps in the table below to stop the Floppy Drive Redirection:

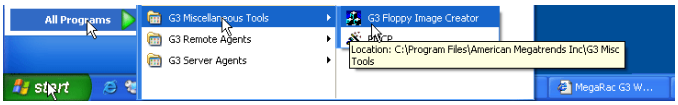
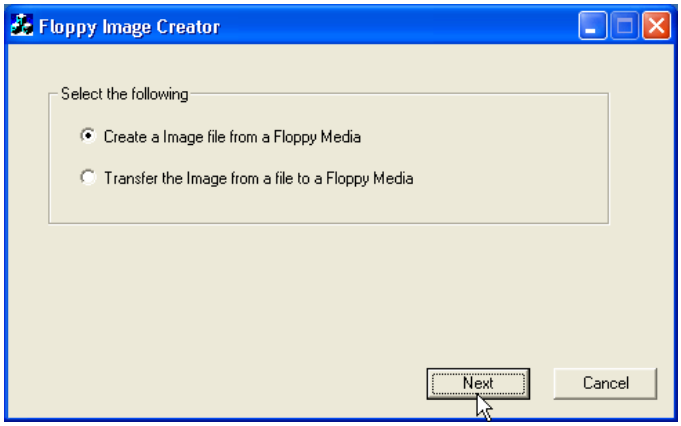
Step	Description
1	There are two ways to stop the *Floppy Drive Redirection*. One way is to use the *Console Redirection* toolbar. Simply left click the *Floppy Drive Redirection* icon. The second way is to use the *Console Redirection* dropdown menu. Left click the *Console Redirection* dropdown menu. You will notice a check next to the *Floppy Redirection* menu item. Left click the *Floppy Redirection* menu item to stop the *Floppy Drive Redirection*. 
2	The *Console Redirection* status dialog box appear as it stops device redirection. 

Cont'd

G3 Floppy Image Creator
Creating a Floppy Image

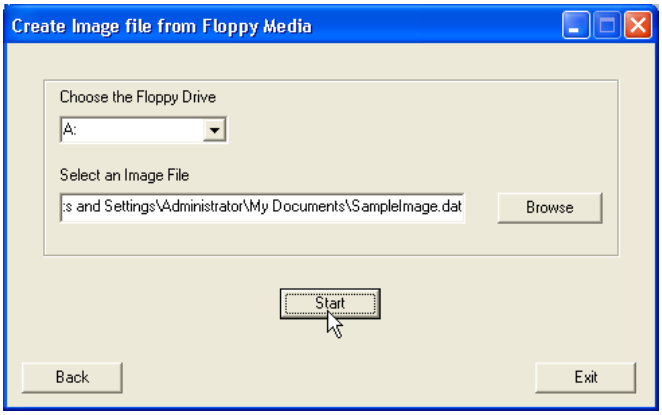
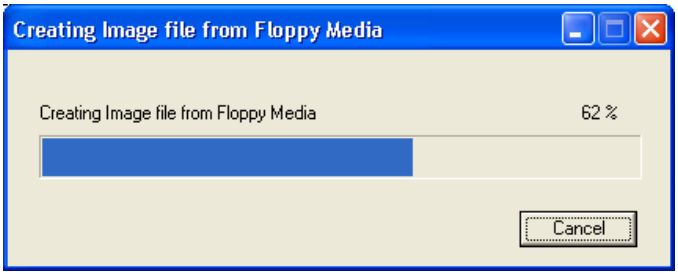
Follow the steps in the table below to create a floppy image to use during device redirection.

Using an image file is desirable because it is faster than redirecting from the actual floppy disk. It is also more convenient to have a series of floppy images stored on a CD or on a local or networked hard disk drive.

Step	Description
1	Open the *Floppy Image Creator* program. 
2	Select *Create an Image file from a Floppy Media* and left click the *Next* button. 

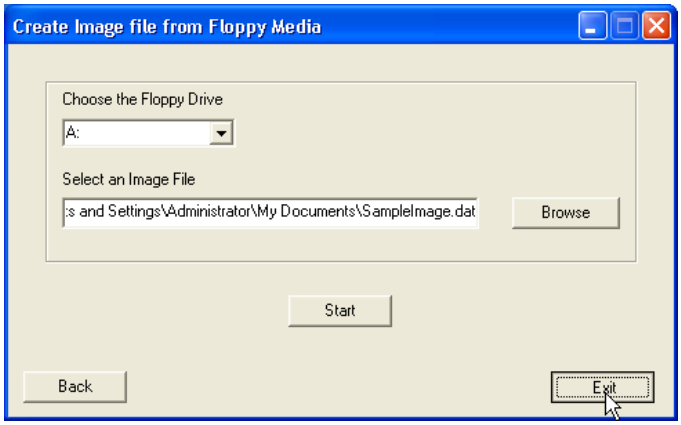
Cont'd

Creating a Floppy Image, Continued

Step	Description
3	Select the floppy drive that you want to create the floppy image from. Select a location where you want the image to be stored and give it a file name. In this example, the file name is **`SampleImage.dat`**. Left click the *Start* button to begin the floppy image creation. 
4	A progress dialog box opens displaying the status of the image creation. 

Cont'd

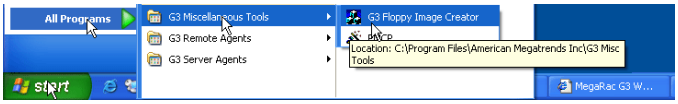
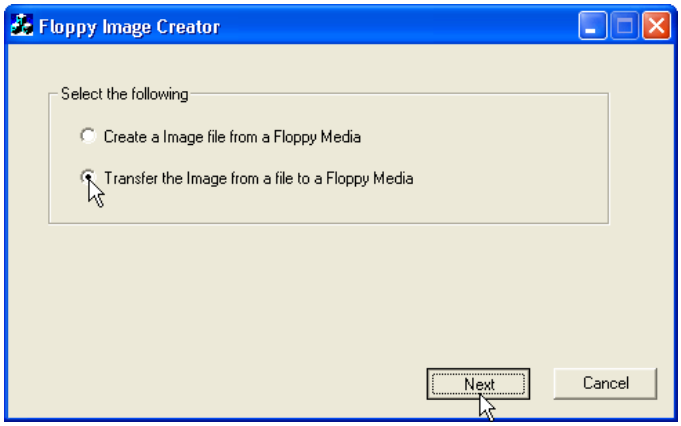
Creating a Floppy Image, Continued

Step	Description
5	Once the floppy image is created, a confirmation dialog box opens. Left click the *OK* button.
6	Congratulations! You have successfully created a floppy image to use to during device redirection. Left click the *Exit* button to close the *Floppy Image Creator* program. 

Cont'd

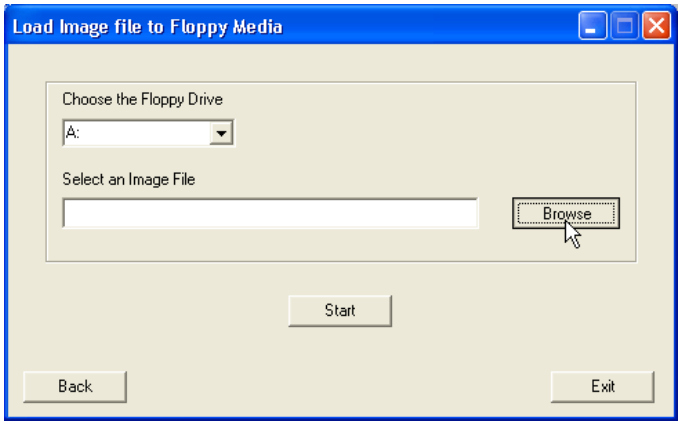
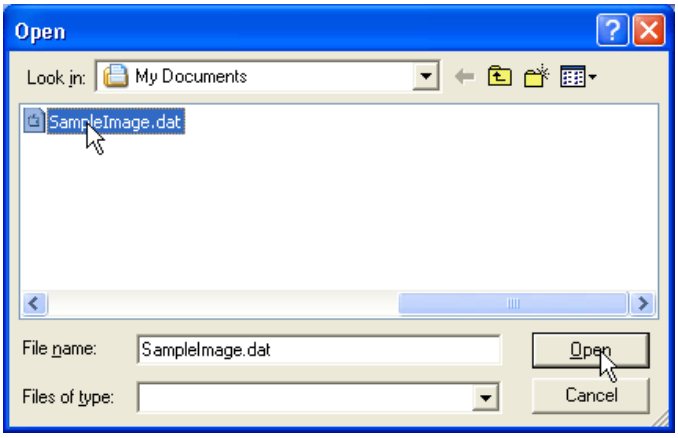
Transferring a Floppy Image to a Floppy Disk

Follow the steps in the table below to transfer a floppy image to a floppy disk.

Step	Description
1	Open the *Floppy Image Creator* program. 
2	Select *Transfer an Image file from a file to a Floppy Media* and left click the *Next* button. 

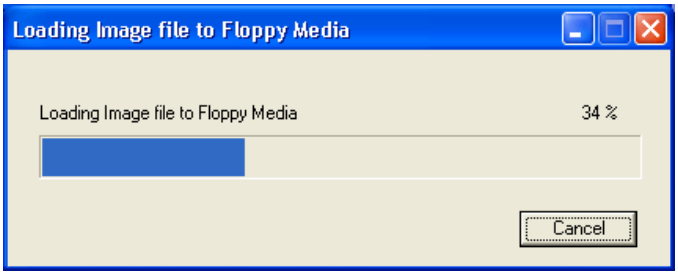
Cont'd

Transferring a Floppy Image to a Floppy Disk, Continued

Step	Description
3	Left click the *Browse* button to locate the floppy image file that you want to copy to the floppy disk. 
4	In this example, the file name is **`SampleImage.dat`**. Left click the image file to select it and left click the *Open* button. 

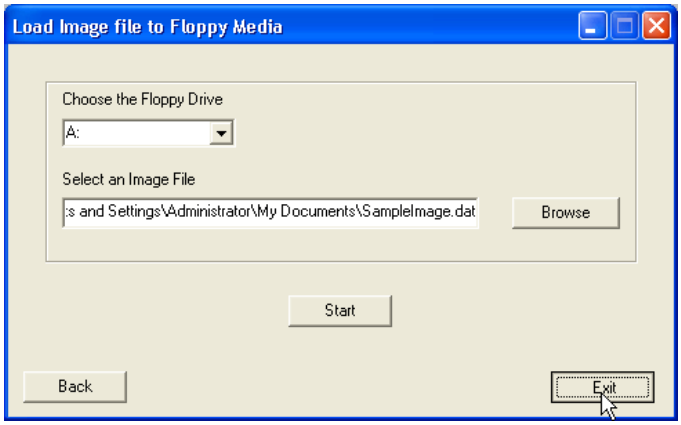
Cont'd

Transferring a Floppy Image to a Floppy Disk, Continued

Step	Description
5	Left click the *Start* button to begin the image transfer to the floppy disk.
6	A progress dialog box opens displaying the status of the image transfer. 

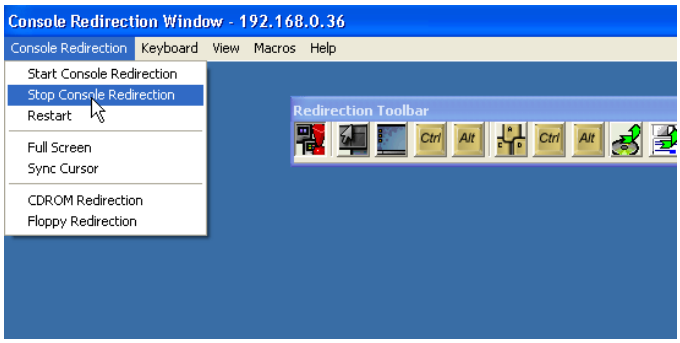
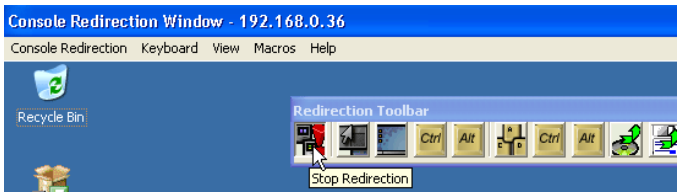
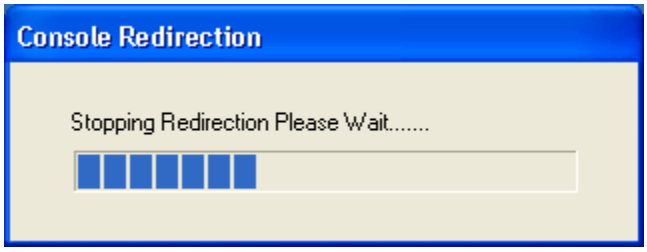
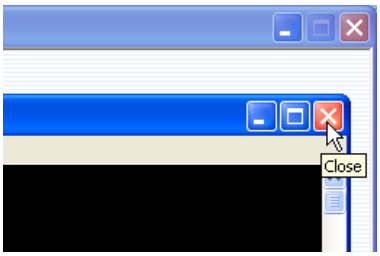
Cont'd

Transferring a Floppy Image to a Floppy Disk, Continued

Step	Description
7	Once the floppy image is transferred, a confirmation dialog box opens. Left click the *OK* button.
8	Congratulations! You have successfully transferred a floppy image to a floppy disk. Left click the *Exit* button to close the *Floppy Image Creator* program. 

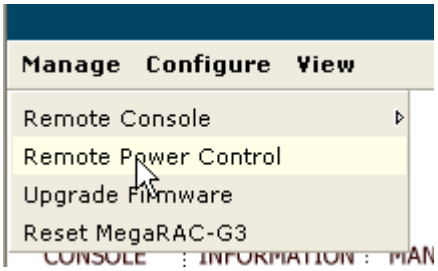
Cont'd

Follow the steps in the table below to stop *Console Redirection*:

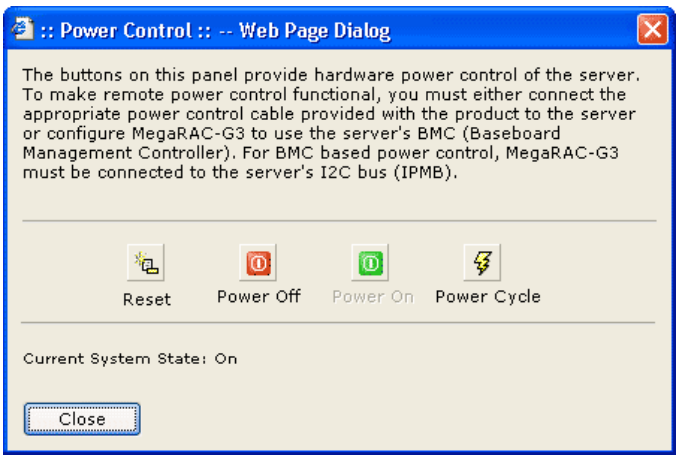
Step	Description
1	Left click the *Console Redirection* dropdown menu item from the toolbar. The dropdown menu will appear. Left click *Stop Console Redirection*.  **Note:** You can press the <ALT> key and the <T> key to stop *Console Redirection*. **Note:** You can left click on the *Stop Redirection* icon on the toolbar to stop *Console Redirection*. 
2	The following *Console Redirection* message box will appear. 
3	Once *Console Redirection* has stopped, you can close both the *Console Redirection* window. You can also leave the window open and start redirection again once you are ready. 

Cont'd

Remote Power Control

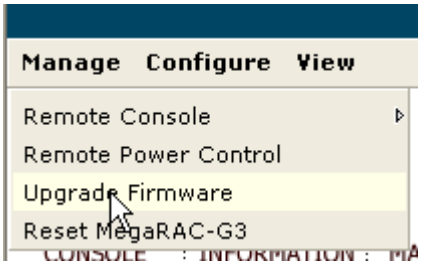


The *Control Host Power* dialog box is a subsection of the *Manage* group. The *Control Host Power* allows you to reset, power off, power on, and power cycle the host system remotely.

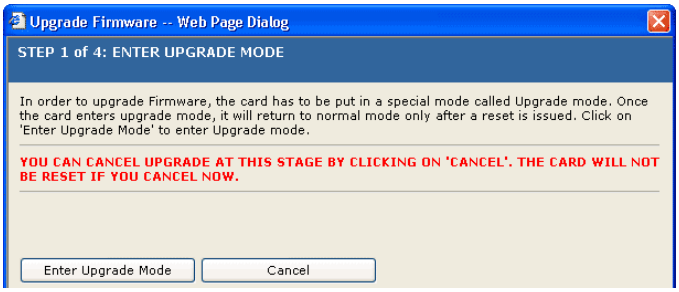

:: Power Control :: -- Web Page Dialog
The buttons on this panel provide hardware power control of the server. To make remote power control functional, you must either connect the appropriate power control cable provided with the product to the server or configure MegaRAC-G3 to use the server's BMC (Baseboard Management Controller). For BMC based power control, MegaRAC-G3 must be connected to the server's I2C bus (IPMB).
Reset
Power Off
Power On
Power Cycle
Current System State: On
Close

Name	Icon	Description
Reset		Left click this button to reset the host system.
Power Off		Left click this button to power down the host system.
Power On		Left click this button to power up the host system.
Power Cycle		Left click this button to power cycle the host system.
Current System State	none	This displays the power status of the host system. It can either be in an *On* state or *Off* state.

Upgrade Firmware



The *Upgrade Firmware Wizard* dialog box is a subsection of the *Manage* group. The *Upgrade Firmware Wizard* will help you upgrade your MegaRAC G3's firmware.


Upgrade Firmware -- Web Page Dialog
STEP 1 of 4: ENTER UPGRADE MODE
In order to upgrade Firmware, the card has to be put in a special mode called Upgrade mode. Once the card enters upgrade mode, it will return to normal mode only after a reset is issued. Click on 'Enter Upgrade Mode' to enter Upgrade mode.
YOU CAN CANCEL UPGRADE AT THIS STAGE BY CLICKING ON 'CANCEL'. THE CARD WILL NOT BE RESET IF YOU CANCEL NOW.
Enter Upgrade Mode
Cancel

> ⚠ ***Warning***
>
> *DO NOT CLOSE THE WINDOW USING THE CLOSE BUTTON (X) ON THE TITLE BAR WHEN THE MEGARAC G3 IS IN UPGRADE MODE. USE THE CANCEL BUTTON ONLY!*

Note: The firmware upgrade process is a crucial operation. Make sure that the chances of a power or connectivity loss are minimal when performing this operation.

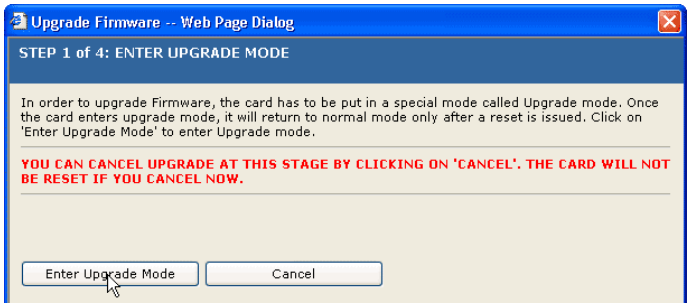
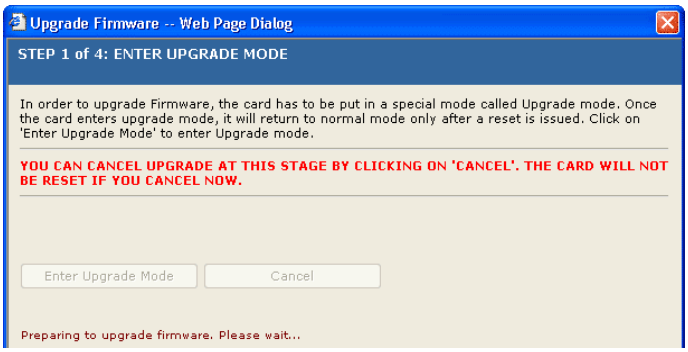
Note: You can use the *Cancel* button at this time to abort the upgrade process. By doing so, the MegaRAC G3 card resets itself (except in Step 1 of 4).

Note: Once you enter into *Flash Mode* and choose to cancel the firmware flash operation, the MegaRAC G3 must be reset. This means that you must close the Internet browser and log back onto the MegaRAC G3 before you can perform any other types of operations.

Cont'd

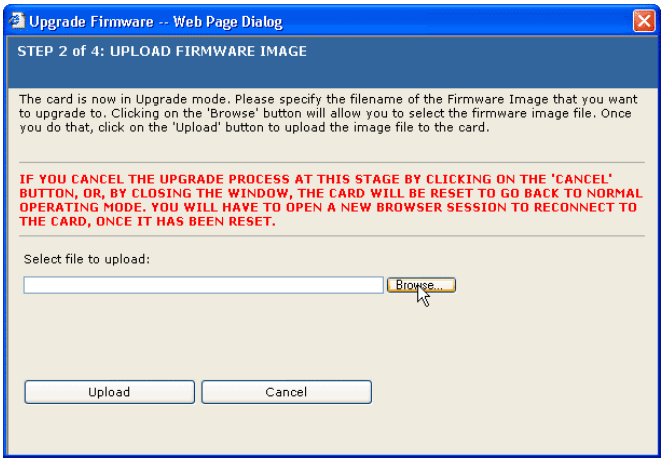
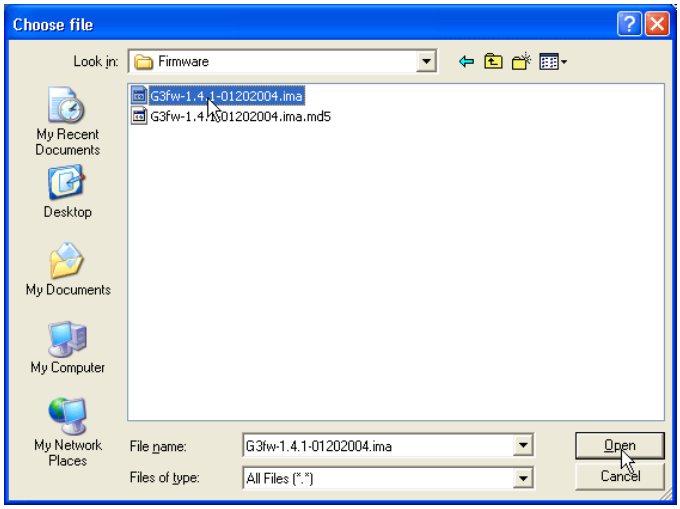
Updating Your MegaRAC G3's Firmware

Follow the steps in the table below to update your MegaRAC G3's firmware:

Step	Description
1	Left click the *Enter Upgrade Mode* button. 
2	The following dialog appears: **`Preparing to upgrade firmware. Please wait…`** 

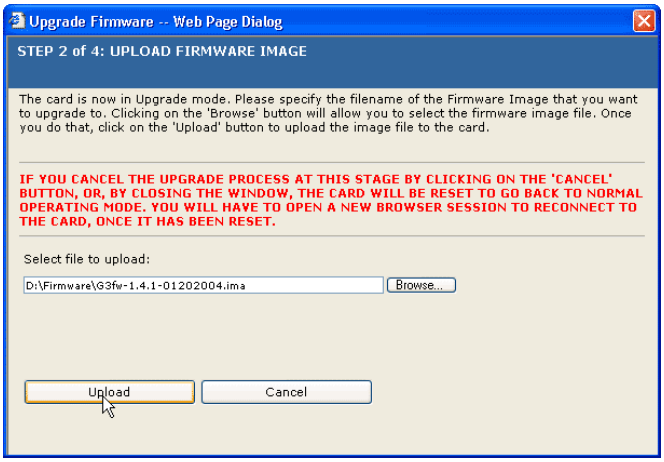
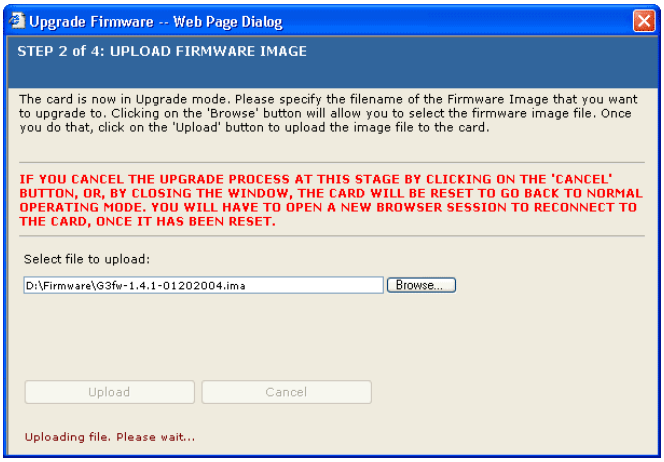
Cont'd

Updating Your MegaRAC G3's Firmware, Continued

Step	Description
3	Left click the *Browse* button to locate the firmware (*.IMA) update file. 
4	Locate the firmware file and select it. Left click the *Open* button. 

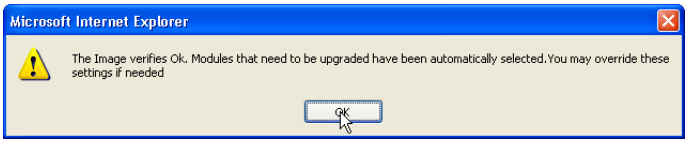
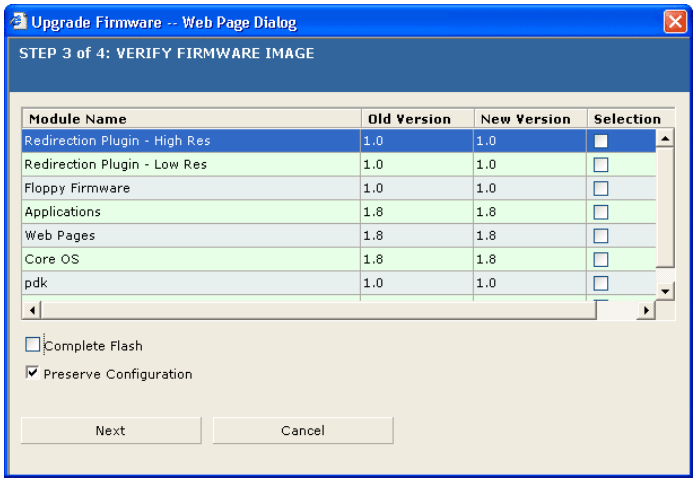
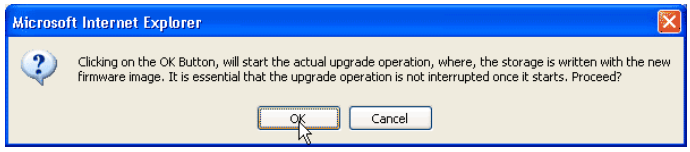
Cont'd

Updating Your MegaRAC G3's Firmware, Continued

Step	Description
5	Left click the *Upload* button to go to the next step. 
6	The MegaRAC G3 firmware wizard will begin to check the existing firmware against the firmware file you are trying to load. 

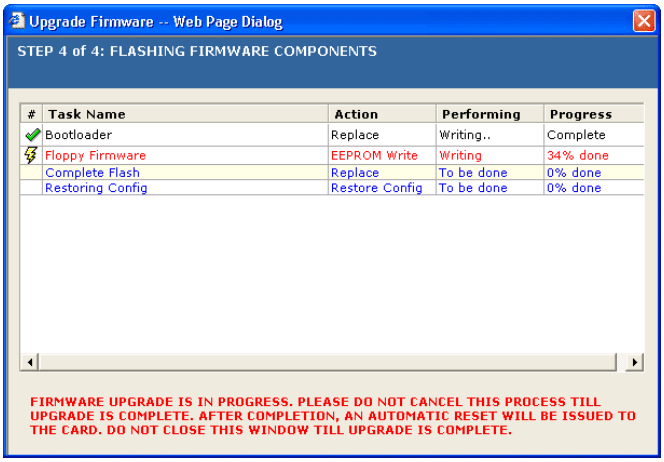
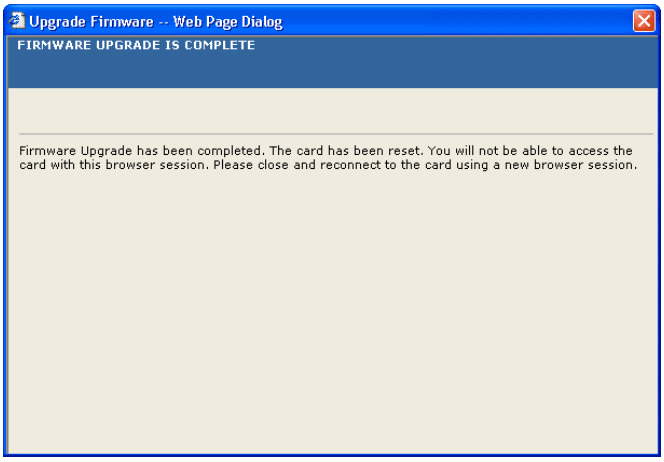
Cont'd

Updating Your MegaRAC G3's Firmware, Continued

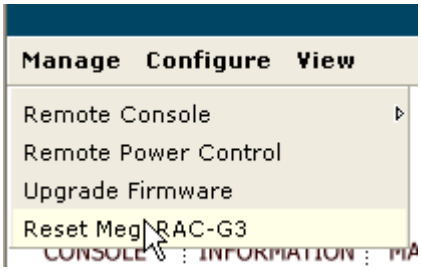
Step	Description
7	Once it verifies the image, the following dialog box appears:  Left click the *OK* button.
8	If the dialog box prompted that an update is necessary, left click the *Flash* button. If the wizard determined that no flash is necessary, you can left click the *Cancel* button.  **Note:** Even if you choose to cancel the firmware flash operation, the MegaRAC G3 must be reset. This means that you must close the Internet browser and log back onto the MegaRAC G3 before you can perform any other types of operations. **Note:** You can place a check next to *Preserve Config* if you want to flash the firmware but retain your original configuration.
9	Left click the *OK* button. 

Cont'd

Updating Your MegaRAC G3's Firmware, Continued

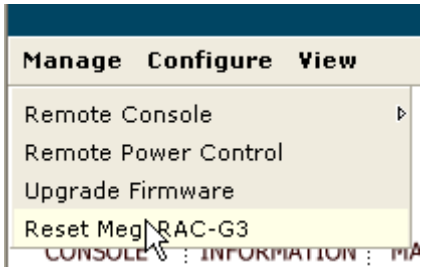
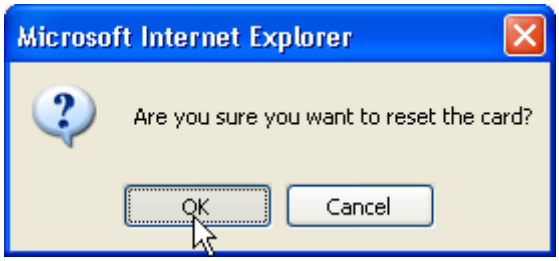
Step	Description
10	When you see this screen, it means that the firmware image is being upgraded. Once the upgrade's progress reaches 100%, it is complete. The MegaRAC G3 will reset itself. You must close the browser and reconnect to the MegaRAC G3 once this process is complete. 
11	After the Firmware Upgrade Wizard has been completed successfully, the MegaRAC G3 will automatically reset itself. This is done in order for the image upgrade to take effect. You cannot perform any other operation within your current Internet browser session Close your Internet browser session and reconnect to your MegaRAC G3. 

Reset MegaRAC G3



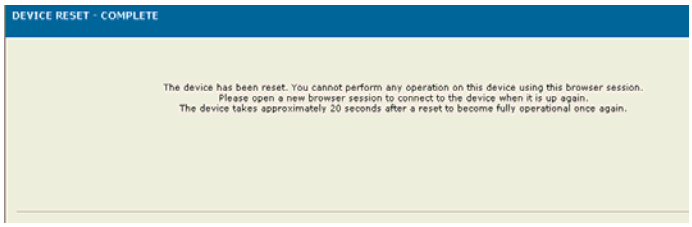
The *Reset MegaRAC G3* menu item is a subsection of the *Manage* group. The *Reset MegaRAC G3* is used to reset your MegaRAC G3 card.

Follow the steps in the table below to reset your MegaRAC G3 card:

Step	Description
1	Left click the *Manage* menu item and then the *Reset MegaRAC G3* menu item. 
2	A confirmation dialog box opens. Left click the *OK* button to verify that you want to reset the MegaRAC G3 card. 

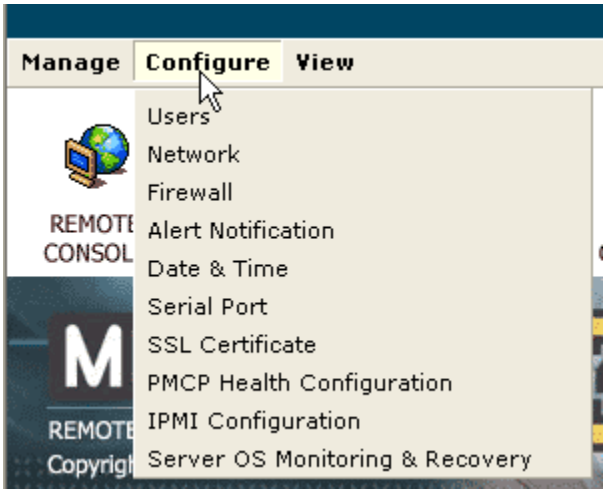
Cont'd

Reset MegaRAC G3, Continued

Step	Description
3	The MegaRAC G3 card resets itself. You are prompted to close Internet Explorer and log back into the MegaRAC G3 card. Left click the *Close* button. 

DEVICE RESET - COMPLETE
The device has been reset. You cannot perform any operation on this device using this browser session.
Please open a new browser session to connect to the device when it is up again.
The device takes approximately 20 seconds after a reset to become fully operational once again.

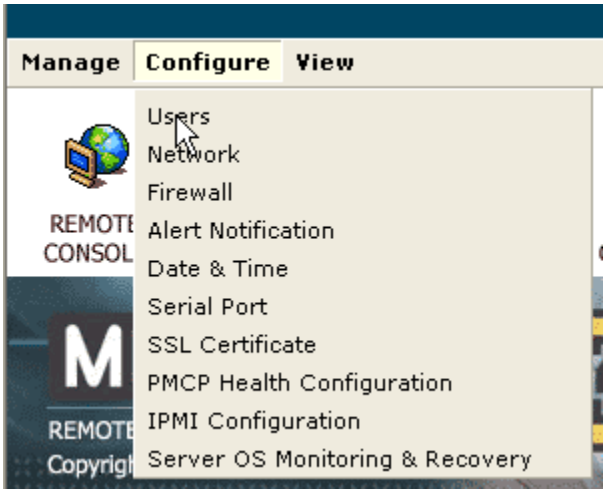
Configure Group



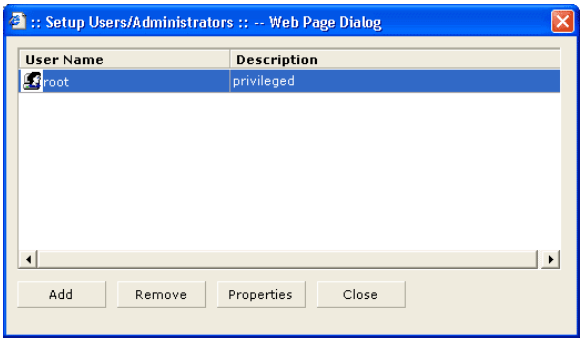
You can left click on the *Configure* menu item from the menu bar. The following table gives you a brief description of each menu item. Each menu item is explained in more detail further in this section.

Function	Description
Users	This menu item allows you to administer users that can access the MegaRAC G3 and host system.
Network	This menu item allows you to configure the network parameters of the MegaRAC G3.
Firewall	This menu item allows you to allow and restrict the IP addresses that can access the MegaRAC G3.
Alert Notification	This menu item allows you to configure how alerts are sent.
Date & Time	This menu item allows you to configure the time on the MegaRAC G3 card.
Serial Port	This menu item allows you to configure Serial Over LAN access on your MegaRAC G3 card.
SSL Certificate	This menu item allows you to upload a Digital Certificate and Private Key to the MegaRAC G3 card.
PMCP File Upload	This menu item allows you to upload a platform management file for your motherboard/ server board.
IPMI Configuration	This menu item allows you to configure the MegaRAC G3 card to read data from an onboard baseboard management controller (BMC) on the motherboard/ server board.
Server OS Monitoring & Recovery	This menu item allows you to configure operating system monitoring and recovery methods.

Users



The *Users* screen is a subsection of the *Configure* group. This page allows you to configure the administrators who have access to the MegaRAC G3.



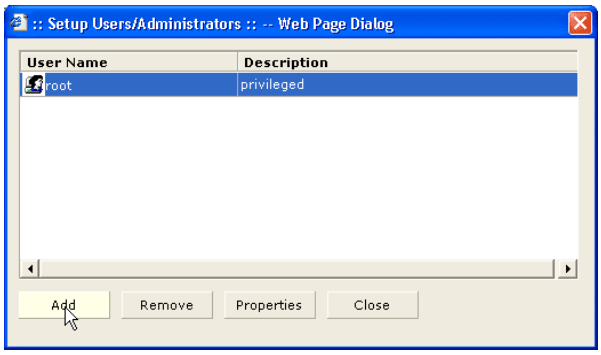
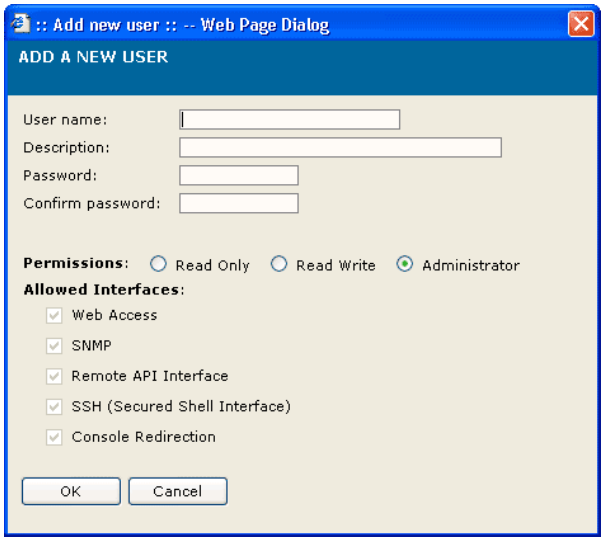
The following table describes the information listed in this subsection in detail:

Item	Description
Username	This field displays a list of all users who are able to access this MegaRAC G3. **Note:** The default administrator is `root`. It is prudent for you to change the `root` password.
Description	This field displays the *Username*'s description that you entered when you created the account for each *Username* in the list.
Add Button	This button allows you to add and configure a new user account to your MegaRAC G3.
Remove Button	This button allows you to eliminate an account from your MegaRAC G3's access list.
Properties Button	This button allows you to view and edit an account.
Close Button	This button allows you to exit the *User* dialog box.

Cont'd

Adding Users

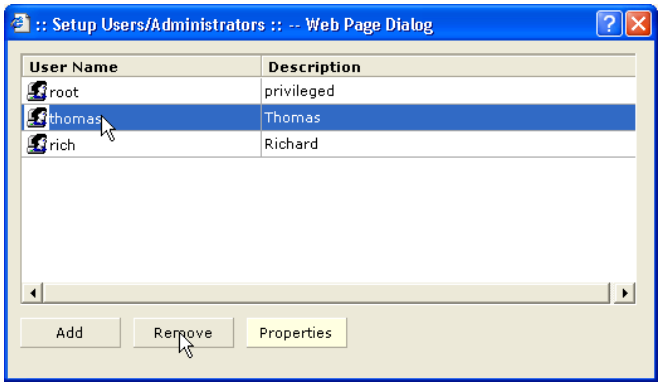
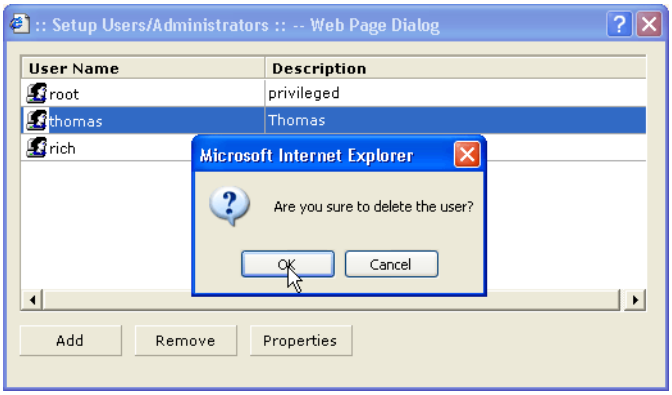
Follow the steps in the table below to add an account:

Step	Description
1	Left click the *Add* button. 
2	Enter a user name in the *Username* field. Your user name must be at least four characters long and no more than 12 characters long. User names are case-sensitive and **must** start with an alphabetical character. You can also enter a short description of the account in the *Description* field. Enter a password in the *Password* field. Your password must be at least eight characters long. Confirm your password by entering your password again in the *Confirm Password* field. **Note:** The password must be a minimum of eight characters and a maximum of sixteen characters. Use alphanumeric characters for better security. The password is case-sensitive. Assign permissions and access rights. After you enter the new administrator's information, left click the *OK* button. **Note:** Only user accounts with administrative rights are allowed to add, edit, and remove users. Non-administrator users can only change their own password. If a new user is given administrative privileges, permissions are automatically granted for all interfaces. 

Cont'd

Removing Users

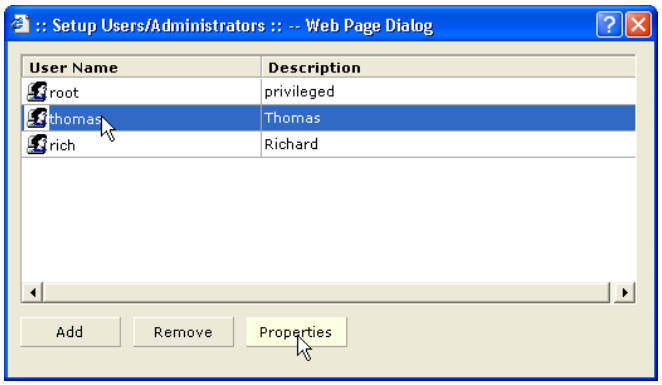
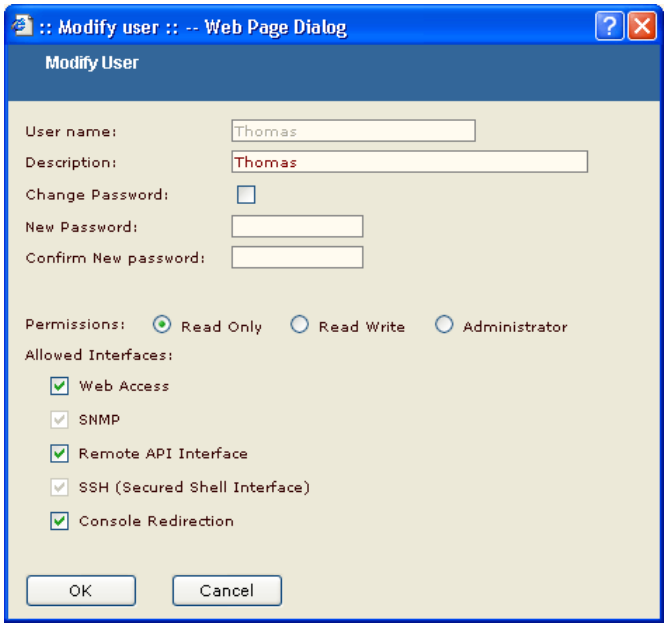
Follow the steps in the table below to remove an account:

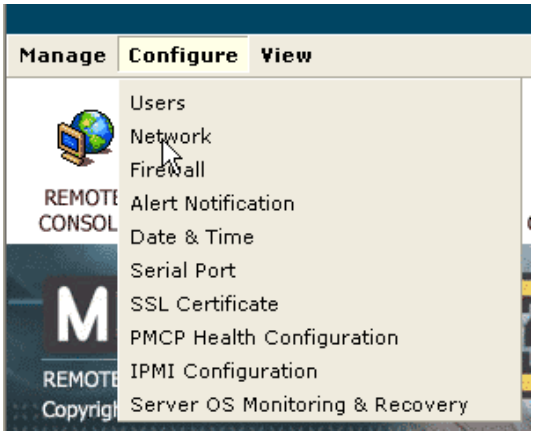
Step	Description
1	Left click an account from the *Username* field. Once the account that you want to remove is highlighted, left click the *Remove* button. 
2	A confirmation dialog box opens. Left click the *OK* button to confirm deletion or left click the *Cancel* button to cancel. 

Cont'd

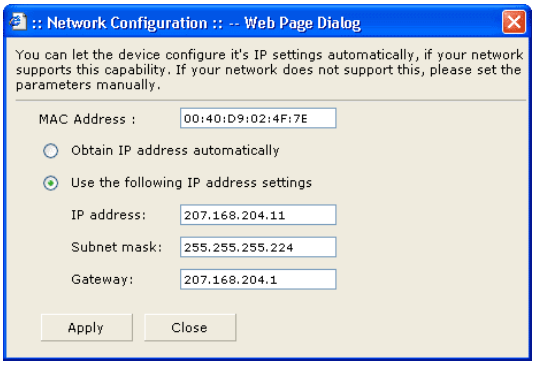
Viewing and Editing Users

Follow the steps in the table below to view and edit an account's access rights and properties:

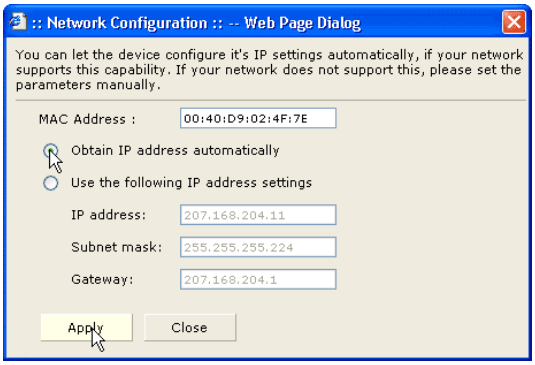
Step	Description
1	Left click an account from the *Username* field. Once the account you want to view and edit is highlighted, left click the *Properties* button. 
2	Here you can change the password, description, permissions, and access rights. After you have viewed and edited the account information, left click the *OK* button. 



Left click the *Network* menu item to configure the Network parameters of the MegaRAC G3. The *Network Settings* dialog box opens:


:: Network Configuration :: -- Web Page Dialog
You can let the device configure it's IP settings automatically, if your network supports this capability. If your network does not support this, please set the parameters manually.
MAC Address :
00:40:D9:02:4F:7E
Obtain IP address automatically
Use the following IP address settings
IP address:
207.168.204.11
Subnet mask:
255.255.255.224
Gateway:
207.168.204.1
Apply
Close

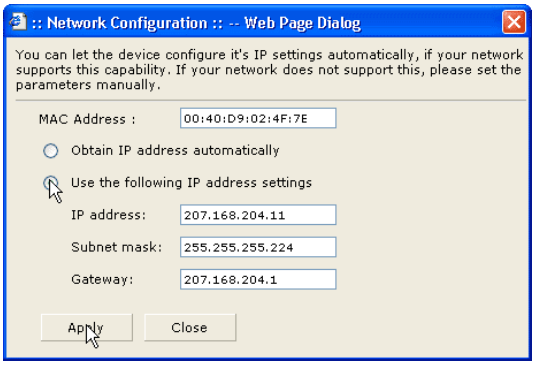
The following table describes the information listed in this subsection in detail:

Item	Description	
MAC Address	This field displays the MegaRAC G3's MAC address.	
Configuration Method	This field allows you to configure the MegaRAC G3's IP address statically or dynamically.	
	Obtain IP address automatically	This option allows the MegaRAC G3's IP to be configured by a DHCP server (dynamically). 

:: Network Configuration :: -- Web Page Dialog
You can let the device configure it's IP settings automatically, if your network supports this capability. If your network does not support this, please set the parameters manually.
MAC Address :
00:40:D9:02:4F:7E
Obtain IP address automatically
Use the following IP address settings
IP address:
207.168.204.11
Subnet mask:
255.255.255.224
Gateway:
207.168.204.1
Apply
Close

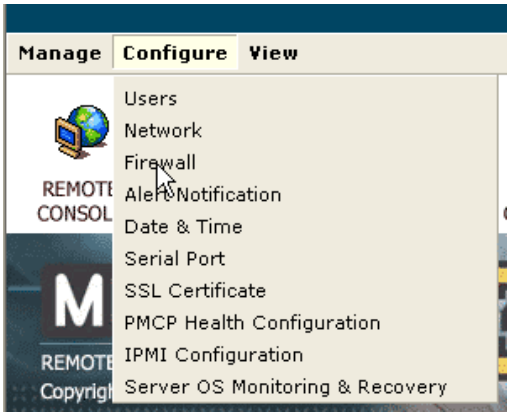
Cont'd

Network, Continued

Item	Description	
	Use the following IP address	This option allows you to configure the MegaRAC G3's IP address with a static IP. The *IP Address*, *Subnet Mask*, and *Gateway* fields will become editable when this option is selected. 
IP Address	This field allows you to set the MegaRAC G3's IP address.	
Subnet Mask	This field allows you to set the *Subnet Mask* The MegaRAC G3 resides on.	
Gateway	This field allows you to set the MegaRAC G3's *Gateway* access address.	
Apply Button	This button allows you to save your configuration.	

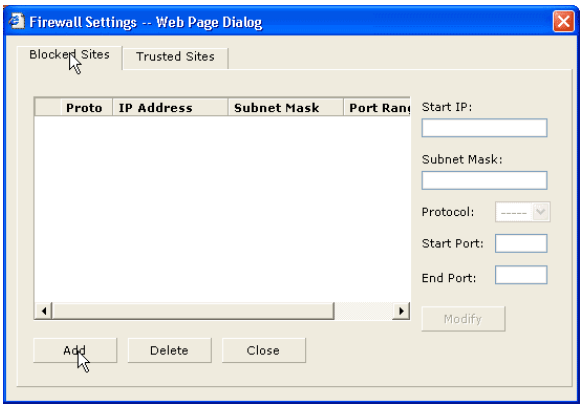
Note: You are prompted to close your Internet browser and reconnect to the new IP address if you make changes to the *Networking Information* screen.

Firewall

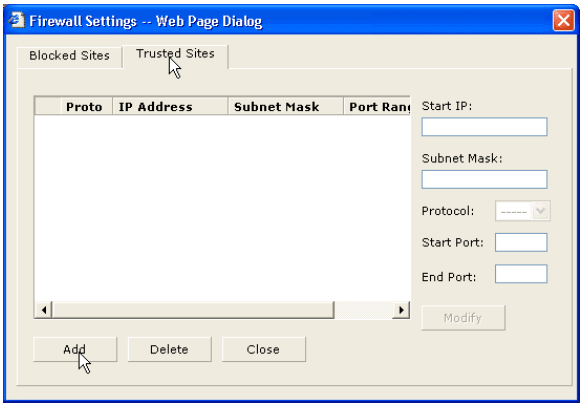


Left click the *Firewall* menu item to configure the IP access parameters of the MegaRAC G3. The *Firewall Settings* dialog box opens. Here you can enter IP addresses to block or allow. You can also specify which ports to block or allow.

Left click the *Blocked Sites* tab to enter a range of IP addresses that you want to block.

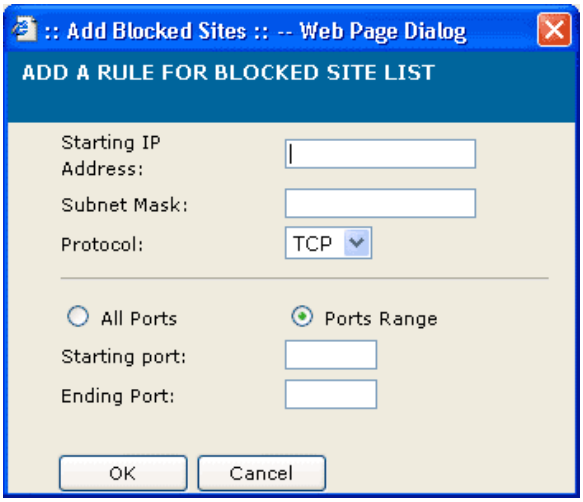


Left click the *Trusted Sites* tab to enter a range of IP addresses that you want to always allow.



Cont'd

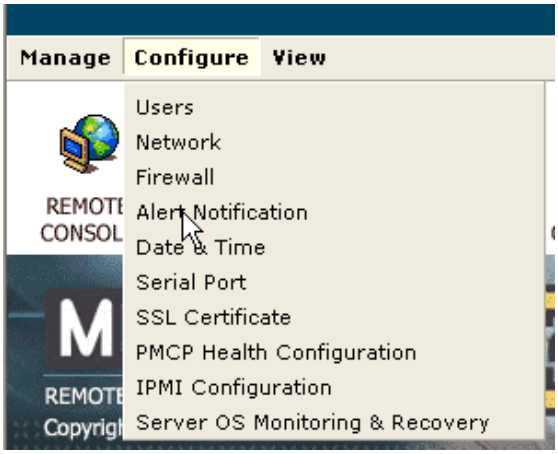
Once you left click the *Add* button on either the *Blocked Sites* or *Trusted Sites*, the following dialog box opens.



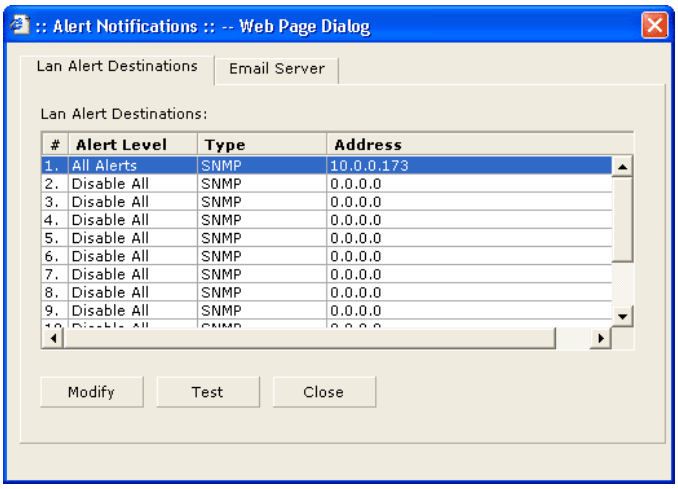
Item	Description
Start IP Address	This field allows you to enter the start address of the subnet you want to either block or always allow.
Subnet Mask	This field allows you to enter the specific subnet of the IP address range that you want to use.
Protocol	This drop down box allows you select either the UDP protocol or TCP protocol. The MegaRAC G3 can be configured to accept or ignore packets based on the type of packet.
All Ports	This setting allows the MegaRAC G3 to accept or ignore ports 1 through 65535.
Ports Range	This setting allows you to select the specific range of ports that you want the MegaRAC G3 to accept or ignore.
Starting Port	This field allows you to enter the first port of the port range that you want the MegaRAC G3 to accept or ignore.
Ending Port	This field allows you to enter the last port of the port range that you want the MegaRAC G3 to accept or ignore.
OK button	Left click the *OK* button when you are satisfied with the information entered.
Cancel button	Left click the *Cancel* button to discard changes and exit.

Note: You can edit any of the IP address ranges by selecting the IP address range from the main *Firewall Dialog Window*. You can enter your adjustments and left clicking on the *Modify* button for the changes to take effect.

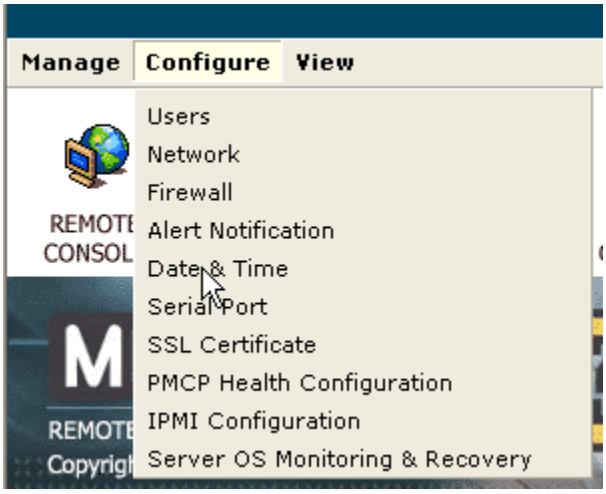
Alert Notification



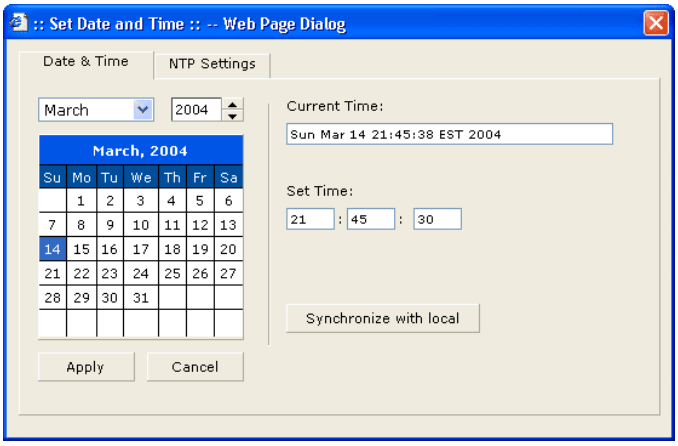
Left click the *Alert Notification* menu item to configure how alerts are sent from the MegaRAC G3 card. The *Alert Notification* dialog box opens. Here you can set SNMP destinations and email destinations.


:: Alert Notifications :: -- Web Page Dialog
Lan Alert Destinations
Email Server
Lan Alert Destinations:
Alert Level Type Address
1. All Alerts SNMP 10.0.0.173
2. Disable All SNMP 0.0.0.0
3. Disable All SNMP 0.0.0.0
4. Disable All SNMP 0.0.0.0
5. Disable All SNMP 0.0.0.0
6. Disable All SNMP 0.0.0.0
7. Disable All SNMP 0.0.0.0
8. Disable All SNMP 0.0.0.0
9. Disable All SNMP 0.0.0.0
Modify
Test
Close

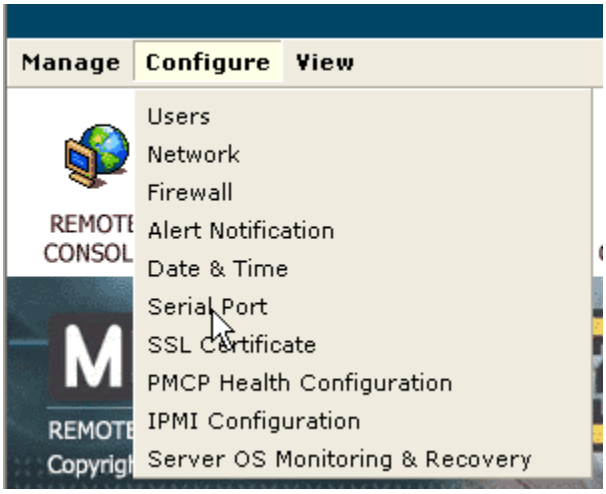
Date & Time



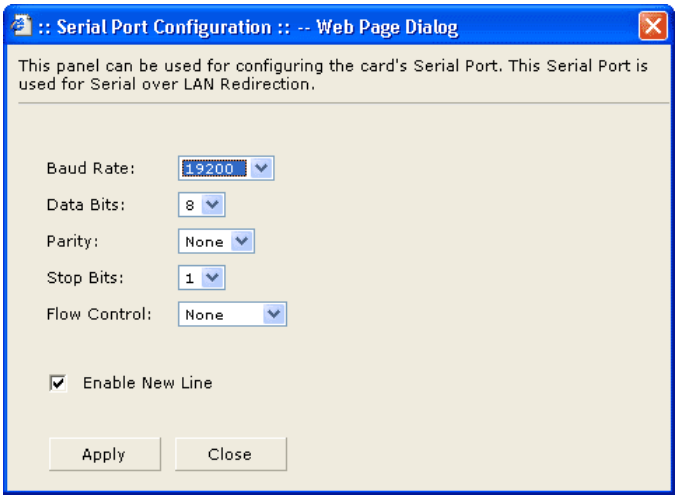
Left click the *Date & Time* menu item to configure the date and time on your MegaRAC G3 card. The *Set Date & Time* dialog box opens. Here you can set the current date and time on your MegaRAC G3 card. You can also have it synchronized with a Network Time Protocol (NTP) server.



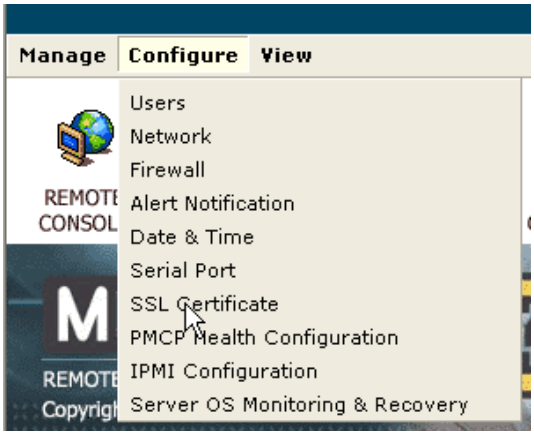
Serial Port



Left click the *Serial Port* menu item to configure the serial port on your MegaRAC G3 card. The *Serial Port Settings* dialog box opens. Here you can set the baud rate, data bit, parity, stop bits, flow control settings.

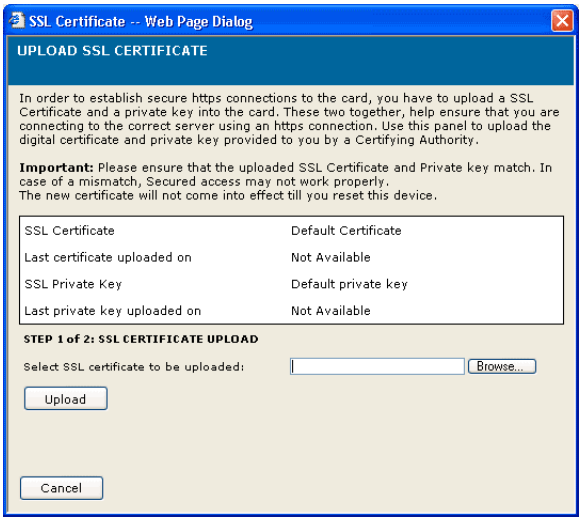

:: Serial Port Configuration :: -- Web Page Dialog
This panel can be used for configuring the card's Serial Port. This Serial Port is used for Serial over LAN Redirection.
Baud Rate: 19200
Data Bits: 8
Parity: None
Stop Bits: 1
Flow Control: None
Enable New Line
Apply
Close

SSL Certificate



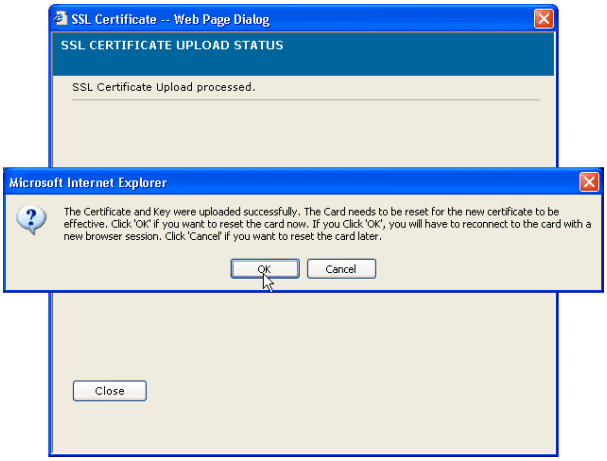
Left click the *SSL Certificate* menu item to configure the security parameters of the MegaRAC G3. The *Upload SSL Certificate* dialog box opens. Here you can upload an *SSL Certificate* and *SSL Private Key* to use when accessing your MegaRAC G3.

Use the *Browse* button to search for your SSL Certificate or Private Key. Both types of files have a PEM file extension.


SSL Certificate -- Web Page Dialog
UPLOAD SSL CERTIFICATE
In order to establish secure https connections to the card, you have to upload a SSL Certificate and a private key into the card. These two together, help ensure that you are connecting to the correct server using an https connection. Use this panel to upload the digital certificate and private key provided to you by a Certifying Authority.
Important: Please ensure that the uploaded SSL Certificate and Private key match. In case of a mismatch, Secured access may not work properly.
The new certificate will not come into effect till you reset this device.
SSL Certificate
Default Certificate
Last certificate uploaded on
Not Available
SSL Private Key
Default private key
Last private key uploaded on
Not Available
STEP 1 of 2: SSL CERTIFICATE UPLOAD
Select SSL certificate to be uploaded:
Browse...
Upload
Cancel

Cont'd

Once you upload the certificates, left click the OK button to reset your MegaRAC G3.


SSL Certificate -- Web Page Dialog
SSL CERTIFICATE UPLOAD STATUS
SSL Certificate Upload processed.
Microsoft Internet Explorer
The Certificate and Key were uploaded successfully. The Card needs to be reset for the new certificate to be effective. Click 'OK' if you want to reset the card now. If you Click 'OK', you will have to reconnect to the card with a new browser session. Click 'Cancel' if you want to reset the card later.
OK
Cancel
Close

You can now access your MegaRAC G3 securely using the following format in your IP Address field from your Internet browser:

`https://`<your MegaRAC G3's IP address here>

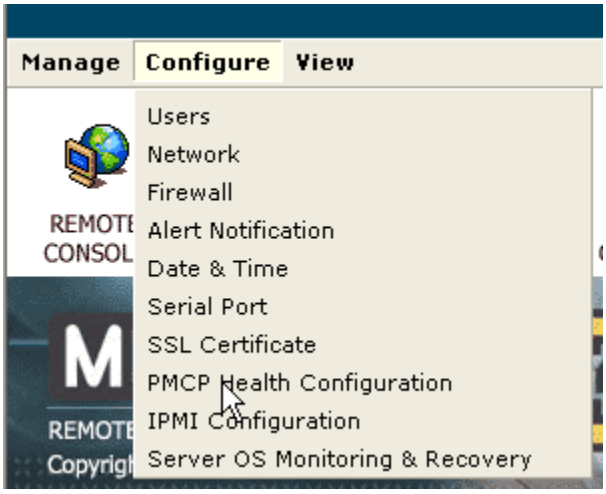
For example, if your MegaRAC G3's IP address is 192.168.0.30, enter the following:

`https://192.168.0.30`

Notice the <**s**> after <**http**>.

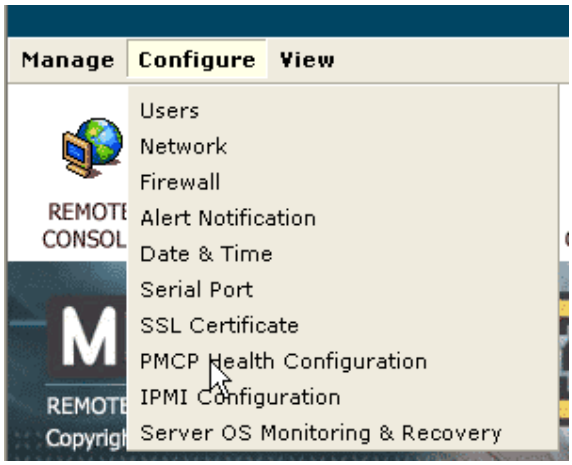
Note: You must accept the certificate before you are able to access your MegaRAC G3 again.

PMCP File Upload

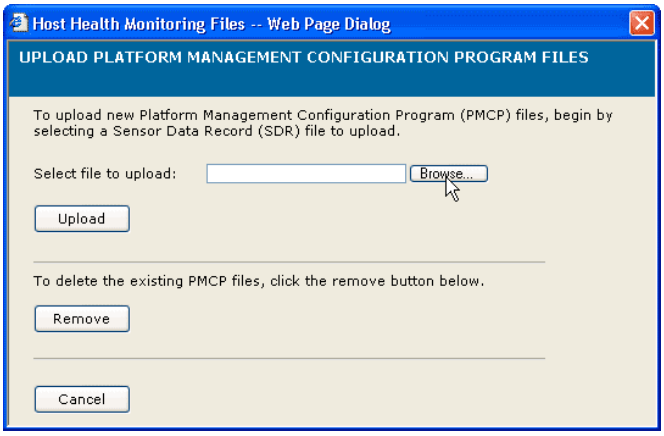


Left click the *PCMP File Upload* menu item to upload a PMCP file to your MegaRAC G3 card. The following table is a pictorial description of how to load an SDR and Soft Processor (SP) File:

Note: *Server Health* is an OEM version feature.

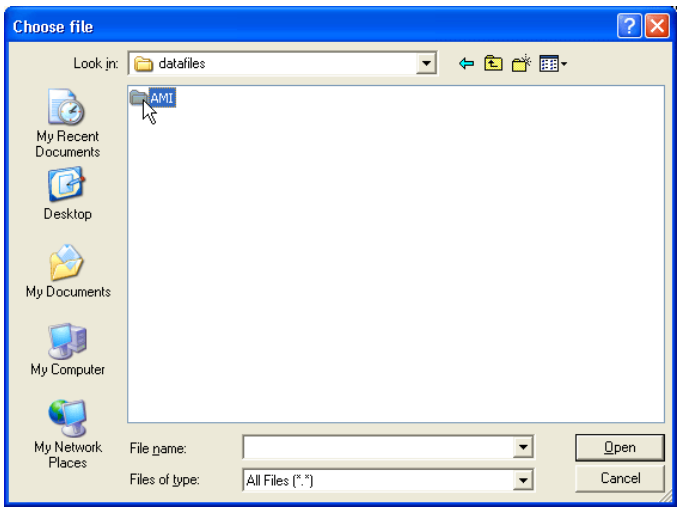
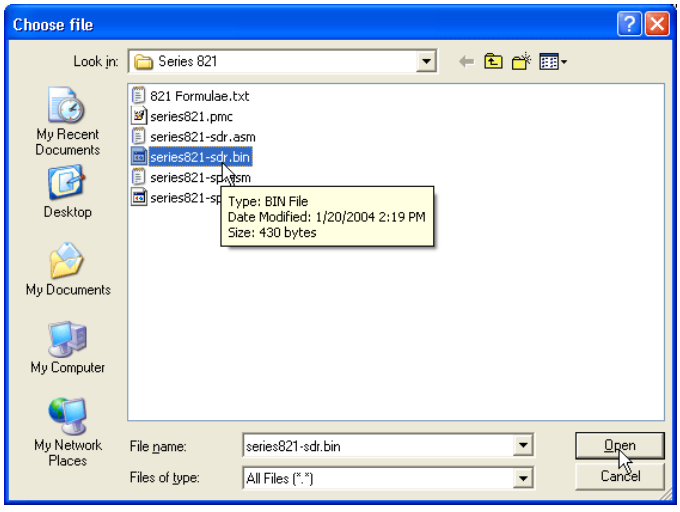
Step	Description
1	The menu bar on the top bar of the GUI has a series of section buttons. Left click on the *Configure* dropdown menu and then left click the *PMCP File Upload* menu item.  Manage Configure View Users Network Firewall Alert Notification Date & Time Serial Port SSL Certificate PMCP Health Configuration IPMI Configuration Server OS Monitoring & Recovery

Step	Description
2	The *Host Health Monitoring Files* dialog box opens. Left click the *Browse* button.


Host Health Monitoring Files -- Web Page Dialog
UPLOAD PLATFORM MANAGEMENT CONFIGURATION PROGRAM FILES
To upload new Platform Management Configuration Program (PMCP) files, begin by selecting a Sensor Data Record (SDR) file to upload.
Select file to upload:
Browse...
Upload
To delete the existing PMCP files, click the remove button below.
Remove
Cancel

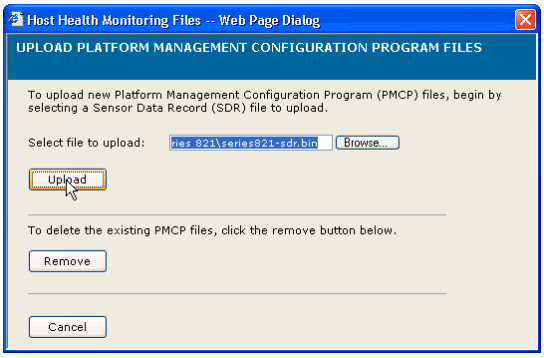
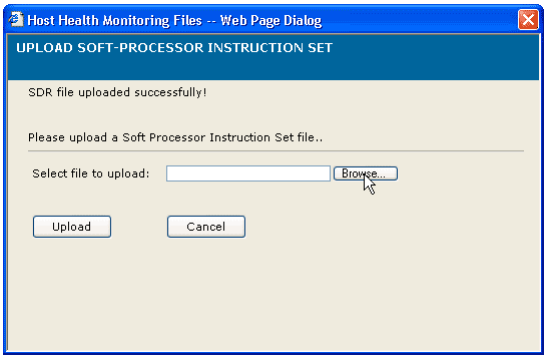
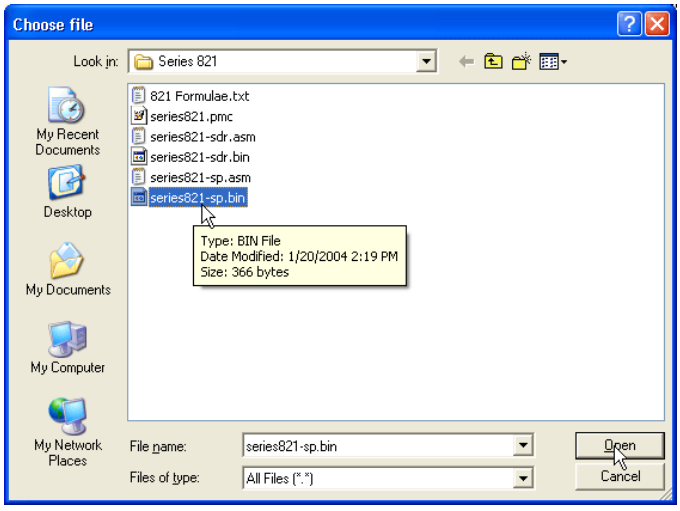
Cont'd

PMCP File Upload, Continued

Step	Description
3	Insert the *MegaRAC™ G3 CD* and browse to it. Select the **`MiscTools>Win32>PMCP>datafiles>`** directory. Select your motherboard manufacturer. In this example, we are using an American Megatrends motherboard, so we will select the **`AMI`** folder.  **Note:** You can create your own SDR and Soft Processor (SP) Files using the *Platform Management Configuration Program (PMCP)* tool. **Note:** The *Choose File* browse window differs from operating system to operating system. However, the procedure is similar.
4	Select the SDR and Soft Processor (SP) File with the **`BIN`** file extension and left click the *Open* button. 

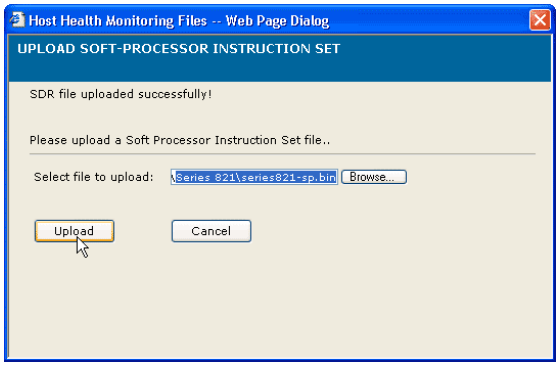
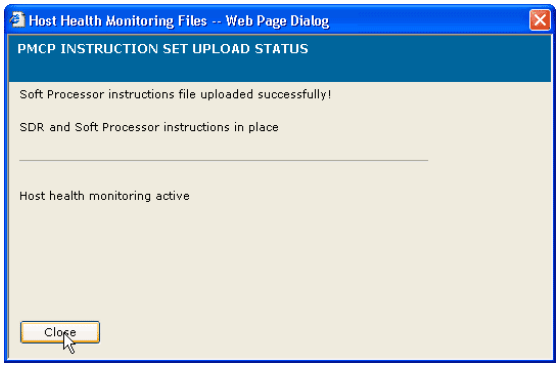
Cont'd

PMCP File Upload, Continued

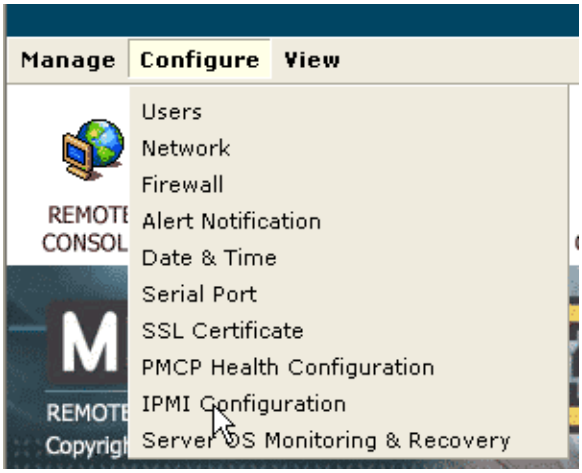
Step	Description
5	Left click the *Upload* button. 
6	Once the SDR and Soft Processor (SP) File is uploaded, you are prompted with verification that the SDR and Soft Processor (SP) File uploaded. 
7	Select the Soft Processor (SP) file with the **`BIN`** file extension and left click the *Open* button. 

Cont'd

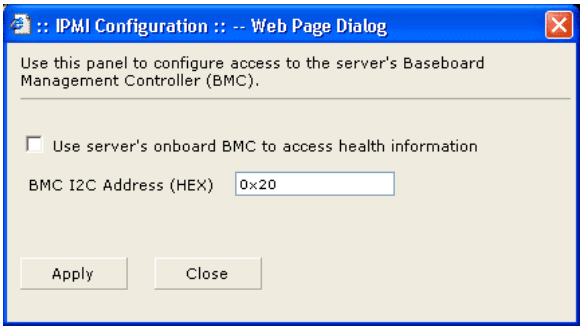
PMCP File Upload, Continued

Step	Description
8	Left click the *Upload* button. 
9	Once the Soft Processor (SP) file is uploaded, you are prompted with verification that the Soft Processor (SP) file uploaded.  You can close the *Host Health Monitoring Files* dialog box by left clicking the *close* icon on the upper right corner of the dialog box.

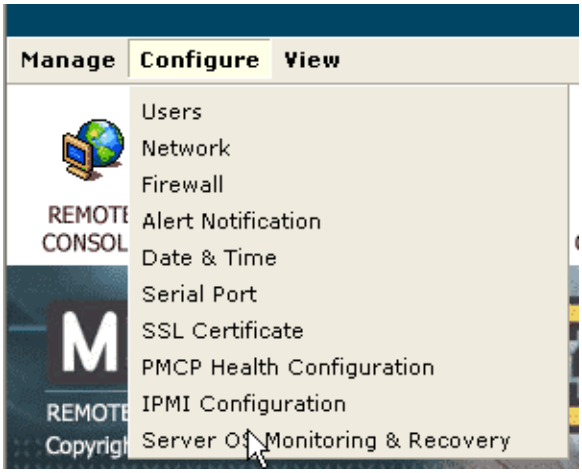
IPMI Configuration



Left click the *IPMI Configuration* menu item to configure the MegaRAC G3 card to read data from an onboard baseboard management controller (BMC) on the motherboard/ server board.


:: IPMI Configuration :: -- Web Page Dialog
Use this panel to configure access to the server's Baseboard Management Controller (BMC).
Use server's onboard BMC to access health information
BMC I2C Address (HEX)
0x20
Apply
Close

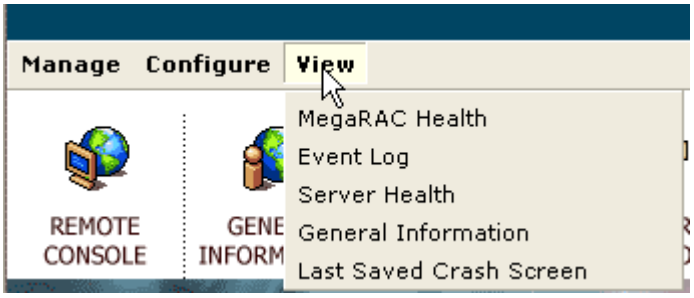
Server OS Monitoring & Recovery



Left click the *Server OS Monitoring & Recovery* menu item to configure operating system monitoring and recovery methods.

:: Server OS Monitoring and Recovery :: -- Web Page ...
Use this panel to configure the interval for Heartbeat failure detection. You can also configure the Auto recovery action to be taken in case of OS Heartbeat failure.
Server Heartbeat Interval : 240 seconds
Enable Auto Server Recovery (ASR)
ASR Delay : 240 seconds
Power Cycle the server
Reset the server
Apply
Refresh
Close

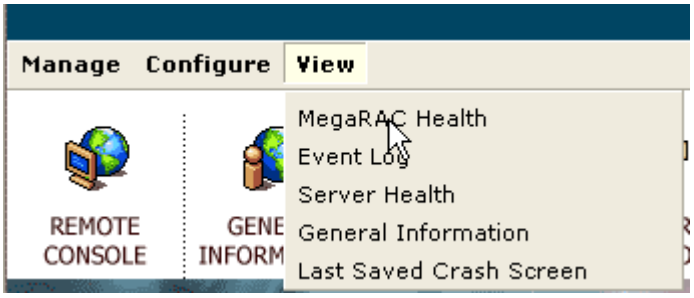
View Group



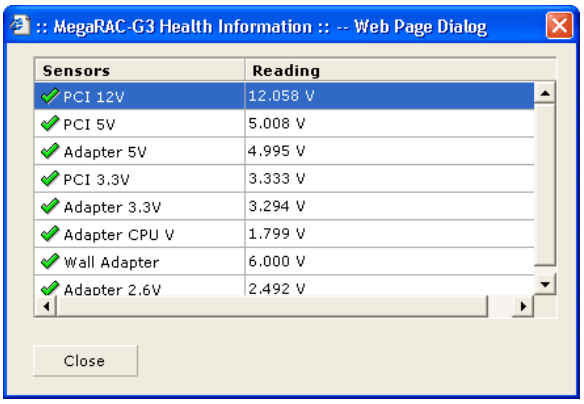
You can left click on the *View* menu item from the menu bar. The following table gives you a brief description of each menu item. Each menu item is explained in more detail further in this section.

Function	Description
MegaRAC Health	This menu item allows you to view the health information of the MegaRAC G3 card.
Event Log	This menu item allows you to view and clear the event logs.
Server Health	This menu item allows you to view the host system's health information based on the sensor readings and platform management configuration information.
General Information	This menu item allows you to view general information about the MegaRAC G3.
Last Saved Crash Screen	This menu item allows you to view the last text screen on the host system before it locked up.

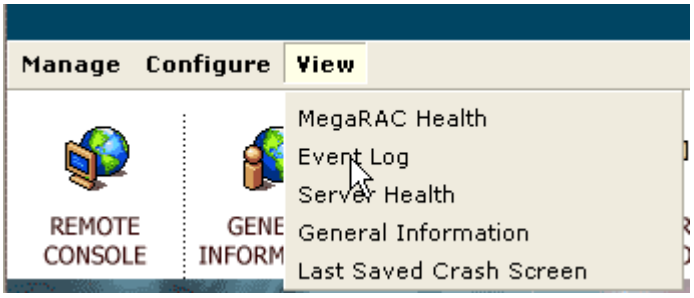
MegaRAC Health



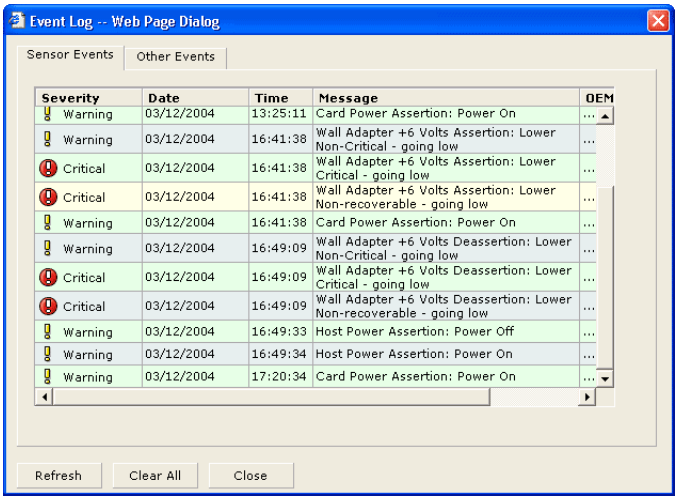
Left click the *MegaRAC Health* menu item to view the health information of the MegaRAC G3 card.



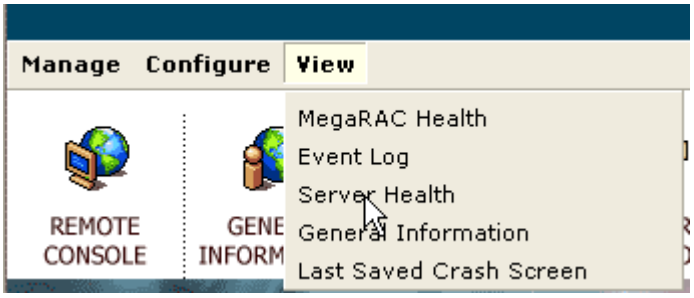
Event Log



Left click the *Event Log* menu item to view and clear the event logs.

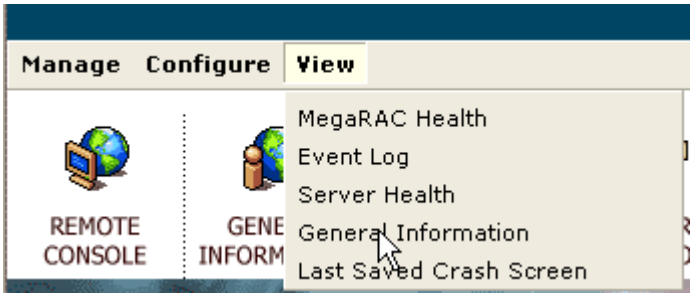

Event Log -- Web Page Dialog
Sensor Events
Other Events
Severity
Date
Time
Message
OEM
Warning 03/12/2004 13:25:11 Card Power Assertion: Power On
Warning 03/12/2004 16:41:38 Wall Adapter +6 Volts Assertion: Lower Non-Critical - going low
Critical 03/12/2004 16:41:38 Wall Adapter +6 Volts Assertion: Lower Critical - going low
Critical 03/12/2004 16:41:38 Wall Adapter +6 Volts Assertion: Lower Non-recoverable - going low
Warning 03/12/2004 16:41:38 Card Power Assertion: Power On
Warning 03/12/2004 16:49:09 Wall Adapter +6 Volts Deassertion: Lower Non-Critical - going low
Critical 03/12/2004 16:49:09 Wall Adapter +6 Volts Deassertion: Lower Critical - going low
Critical 03/12/2004 16:49:09 Wall Adapter +6 Volts Deassertion: Lower Non-recoverable - going low
Warning 03/12/2004 16:49:33 Host Power Assertion: Power Off
Warning 03/12/2004 16:49:34 Host Power Assertion: Power On
Warning 03/12/2004 17:20:34 Card Power Assertion: Power On
Refresh
Clear All
Close

Server Health

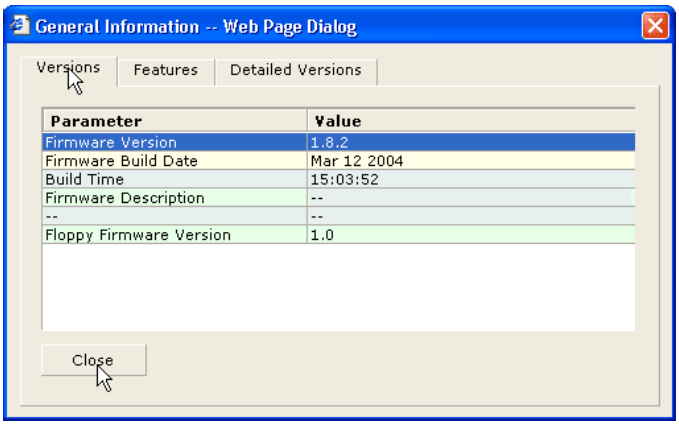


Left click the *Server Health* menu item to view the host system's health information based on the sensor readings and platform management configuration information.

General Information



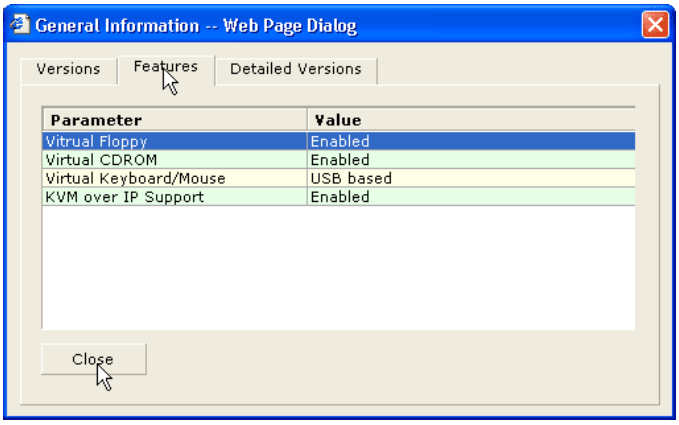
General Information : Version



Parameter	Description
Firmware Version	This field gives the MegaRAC G3's firmware version number.
Firmware Build Date	This field gives the MegaRAC G3's build date. It is in the following format: **MONTH DAY YEAR**
Firmware Build Time	This field gives the MegaRAC G3's build time. It is in the following format: **HOUR:MIN:SEC**
Firmware Description	This field displays a short description of the firmware.
Floppy Firmware Version	This field displays the floppy emulation firmware version.

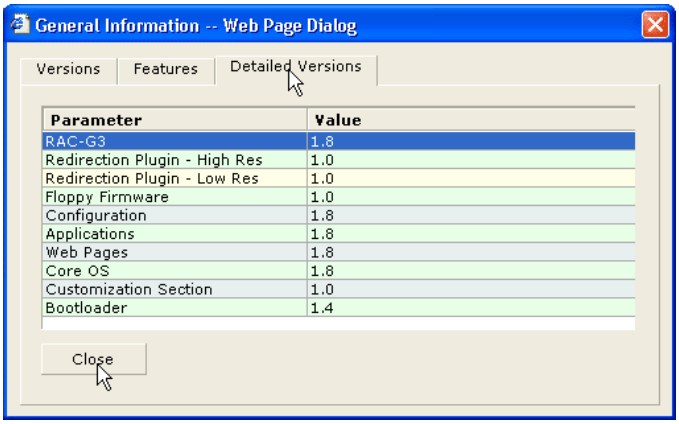
Cont'd

General Information : Features



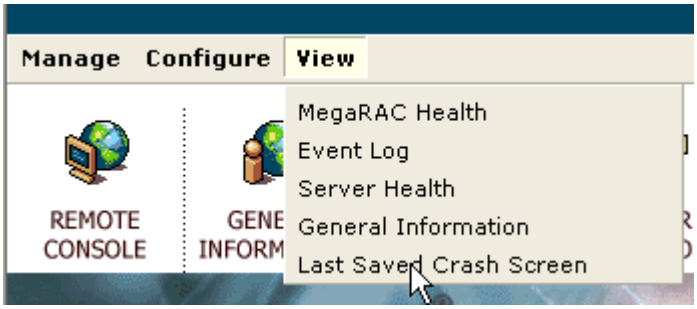
Parameter	Description
Virtual Floppy	This field displays whether or not floppy redirection is available.
Virtual CDROM	This field displays whether or not CD-ROM redirection is available.
Virtual Keyboard/Mouse	This field displays the type of emulation is used for the keyboard and mouse. USB emulation is not available in this version of MegaRAC G3.
KVM over IP Support	This field displays whether or not KVM over IP is supported.

General Information : Detailed Versions



Parameter	Description
Parameter	This column gives the name of the parameter.
Value	This column gives the version of the parameter.

Last Saved Crash Screen



This menu item allows you to view the last text-based screen in the event that the host system locks up or freezes during a blue screen. This is useful because it allows you to troubleshoot the host system. You will be prompted to login.

Note: To view the *Crash Screen*, you need to have Java™ Runtime Environment (JRE) installed. The *Crash Screen* viewer is a Java™ Applet and therefore needs JRE. Visit the following website for the JRE installation files:

`http://java.sun.com/`

Note: The maximum size that the *Crash Screen* image can be is 50 Kb. Because of this, only one *Crash Screen* image can be saved. Also, only text-based crashes can be captured. Graphics-based freezes and lock ups are not captured to the *Crash Screen* program.

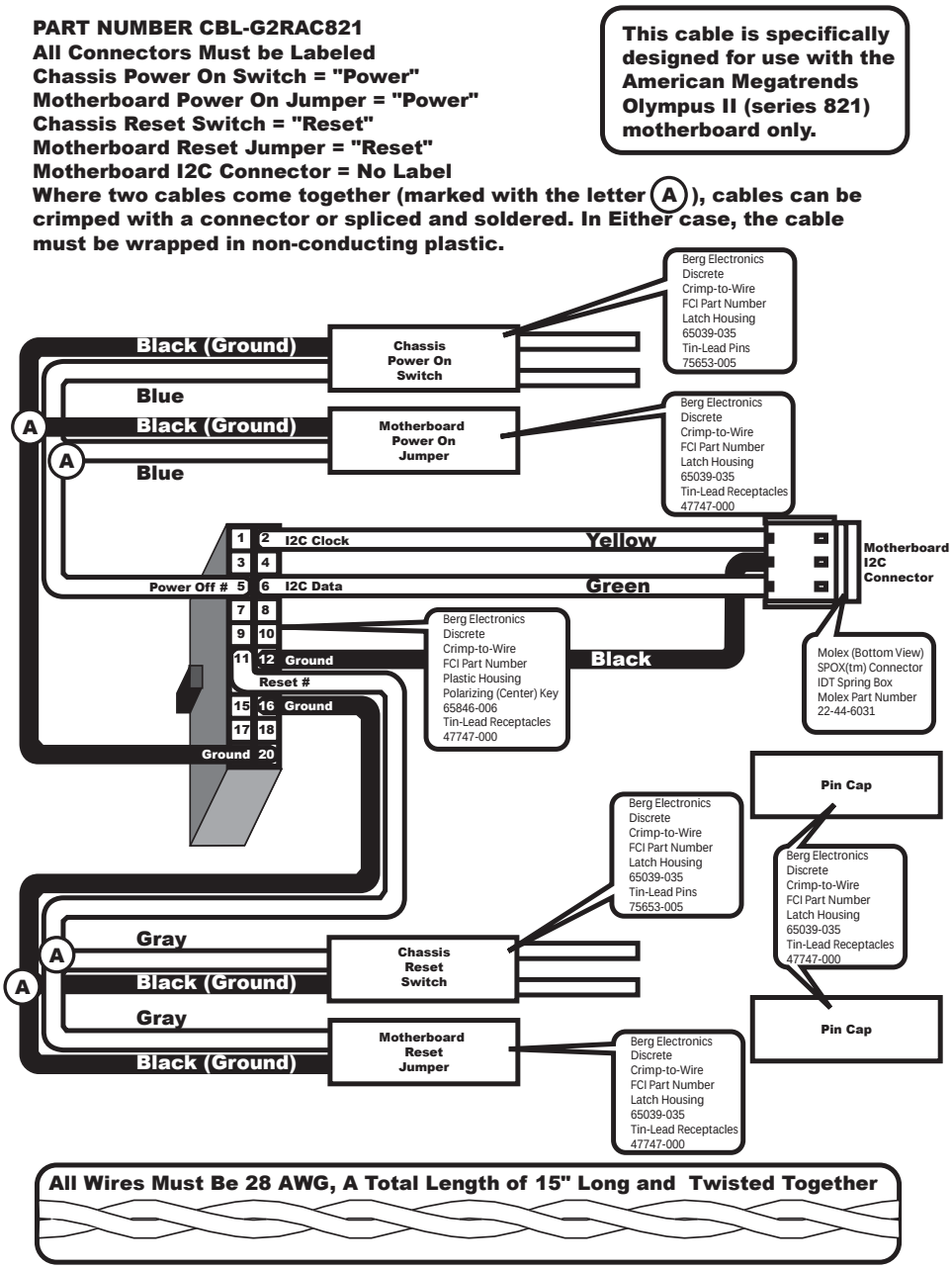
Note: You cannot flush a captured *Crash Screen* image from the MegaRAC G2 card's memory. It will automatically be erased when another *Crash Screen* image is saved.

Appendix A MegaRAC Feature Cable

MegaRAC Feature Cable Layout

Note: If you do not have an American Megatrends Olympus II (series 821) motherboard, you cannot use the I2C connector to monitor the hardware health of the motherboard.

Note: If you do not use the *chassis power on switch* or *chassis reset switch* pins, you should place a plastic cap on them so that they do not short your motherboard. Do not use a standard jumper. It will short the connection.

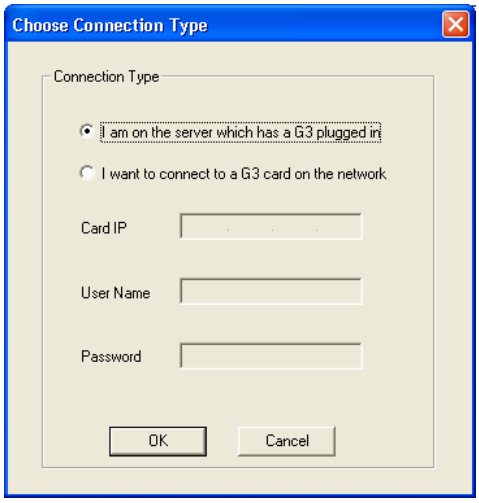

PART NUMBER CBL-G2RAC821
All Connectors Must be Labeled
Chassis Power On Switch = "Power"
Motherboard Power On Jumper = "Power"
Chassis Reset Switch = "Reset"
Motherboard Reset Jumper = "Reset"
Motherboard I2C Connector = No Label
Where two cables come together (marked with the letter A), cables can be crimped with a connector or spliced and soldered. In Either case, the cable must be wrapped in non-conducting plastic.
This cable is specifically designed for use with the American Megatrends Olympus II (series 821) motherboard only.
Berg Electronics Discrete Crimp-to-Wire FCI Part Number Latch Housing 65039-035 Tin-Lead Pins 75653-005
Chassis Power On Switch
Black (Ground)
Blue
Black (Ground)
Blue
Motherboard Power On Jumper
Berg Electronics Discrete Crimp-to-Wire FCI Part Number Latch Housing 65039-035 Tin-Lead Receptacles 47747-000
A
A
1 2 I2C Clock
3 4
Power Off # 5 6 I2C Data
7 8
9 10
11 12 Ground
Reset #
15 16 Ground
17 18
Ground 20
Yellow
Green
Black
Motherboard I2C Connector
Berg Electronics Discrete Crimp-to-Wire FCI Part Number Plastic Housing Polarizing (Center) Key 65846-006 Tin-Lead Receptacles 47747-000
Molex (Bottom View) SPOX(tm) Connector IDT Spring Box Molex Part Number 22-44-6031
Pin Cap
Berg Electronics Discrete Crimp-to-Wire FCI Part Number Latch Housing 65039-035 Tin-Lead Pins 75653-005
Berg Electronics Discrete Crimp-to-Wire FCI Part Number Latch Housing 65039-035 Tin-Lead Receptacles 47747-000
Gray
Black (Ground)
Gray
Black (Ground)
Chassis Reset Switch
Motherboard Reset Jumper
A
A
Pin Cap
Berg Electronics Discrete Crimp-to-Wire FCI Part Number Latch Housing 65039-035 Tin-Lead Receptacles 47747-000
All Wires Must Be 28 AWG, A Total Length of 15" Long and Twisted Together

Appendix B G3ConfigApp

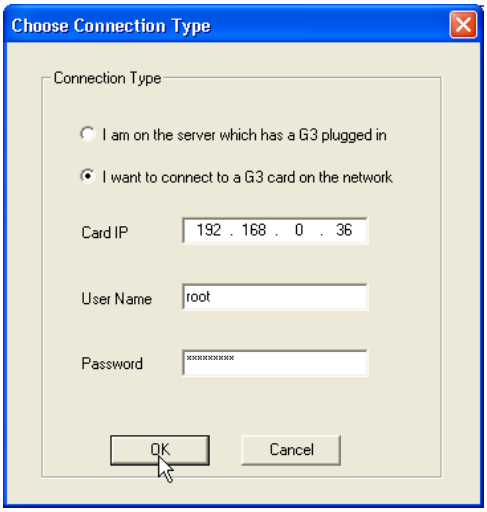
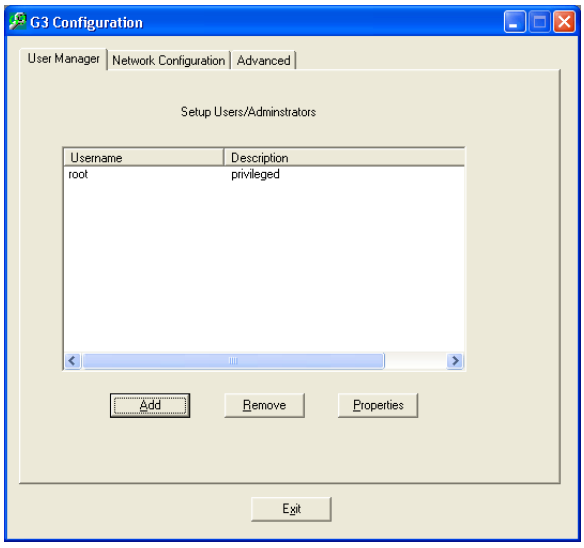
Overview

The MegaRAC G3 card is normally configured through the Internet browser-based *Remote Access Companion for MegaRAC G3.* You can also configure your MegaRAC G3 card through the *G3ConfigApp* utility. The *G3ConfigApp* utility is a GUI-based program that runs in Microsoft Windows.

G3ConfigApp

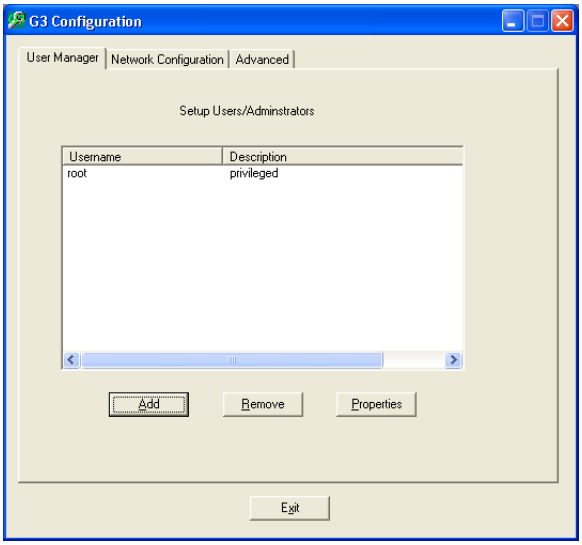
Step	Description
1	The *G3ConfigApp* program allows you to configure the MegaRAC G3 card. You can run the *G3ConfigApp* program from the host system or from a client system. The client system is the system that will connect to the MegaRAC G3 card remotely through the network. This is basically WinCuri with a GUI. To run the *G3ConfigApp* program, double left click the **`G3ConfigApp.exe`** icon located in either of the following directories on your *MegaRAC G3 CD:* • **`CDROM\RemoteTools\Win32\`** • **`CDROM\ServerAgent\Win32\`**
2	The following window appears:  If you are running the *G3ConfigApp* program from the host system, select the first radial button labeled '***I am on the server which has a G3 plugged in'*** and left click on the *Ok* button. **Note:** Make sure that the MegaRAC G3 card is connected to the host system's motherboard through the USB cable.

Cont'd

Step	Description
3	If you are running the *G3ConfigApp* program from a remote system, select the second radial button labeled '***I want to connect to a G3 on the network***'. Type in the MegaRAC G3 card's IP address in the field to the right of *Card IP*. Type in your user name and password in the appropriate fields and left click on the *Ok* button.  **Note:** You must know the MegaRAC G3 card's IP address before running the *G3ConfigApp* program from a remote system. Run the ***G3Seek*** program to find the MegaRAC G3 card's IP address.
4	The following *G3ConfigApp Dialog* window appears:  The *G3ConfigApp Dialog* window allows you to manage users, configure the network, flash the MegaRAC G3 card's firmware and perform advanced configurations.

Cont'd

User Manager Tab

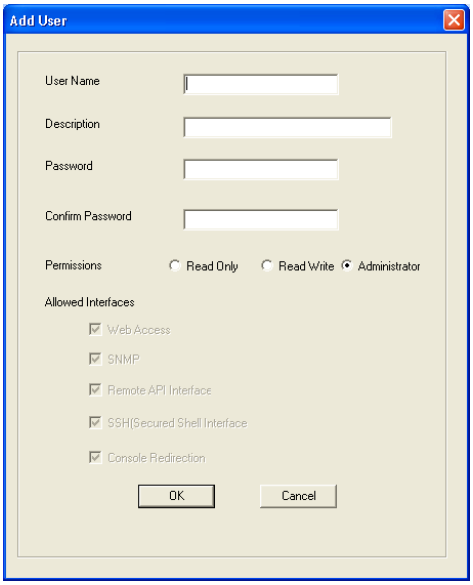


The *User Manager* tab allows you to manage the MegaRAC G3 card's users. Here you can add, delete, and modify users.

Field/ Button	Description
Add Button	The *Add* button allows you to add a new administrator to the MegaRAC G3 card's user list. The user name must be no more than eight characters long.
Remove Button	The *Remove* button allows you to delete an existing administrator from the user list. Simply highlight the account name that you want to remove and left click the *Remove* button.
Properties Button	The *Properties* button allows you to view and edit an existing administrator's record.
Exit Button	The *Exit* button allows you to log off the MegaRAC G3 Card Configuration program.

Cont'd

Adding a User

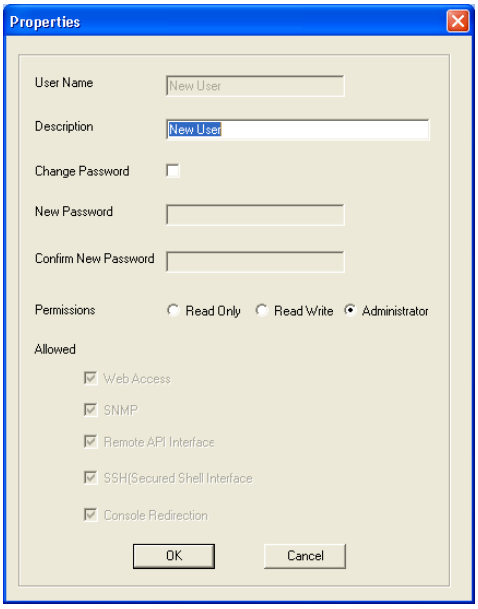


The *Add User* fields are explained below:

Field/ Button	Description
User Name	You can enter the name of this account in this field.
Description	You can enter a short description for this account.
Password	You can use this field to enter the account password. **Note:** The password must be a minimum of eight characters and a maximum of sixteen characters. Use alphanumeric characters for better security. The password is case-sensitive. Parenthesis, slashes, asterisks, spaces, the *at* sign (@), and the *hash* sign (#) are not allowed. The *at* sign (@) and the *hash* sign (#) characters have special meanings on some UNIX based server.
Confirm Password	You must reenter the password. The *Confirm Password* field allows you to reenter the user's password.
Permissions	You can select the permission level for this account.

Cont'd

User Properties



Field/ Button	Description
User Name	The selected MegaRAC G3 card user is displayed in this field. It cannot be changed.
Description	You can view and modify the short description for this account.
Change Password	Left click this box if you want to change the user's password.
New Password	After you check the *Change Password* box, you can use this field to enter the new password. **Note:** The password must be a minimum of eight characters and a maximum of sixteen characters. Use alphanumeric characters for better security. The password is case-sensitive. Parenthesis, slashes, asterisks, spaces, the *at* sign (@), and the *hash* sign (#) are not allowed. The *at* sign (@) and the *hash* sign (#) characters have special meanings on some UNIX based server.
Confirm Password	You must reenter the new password. The *Confirm Password* field allows you to reenter the user's new password.
Permissions	You can view and modify the permission level for this account.

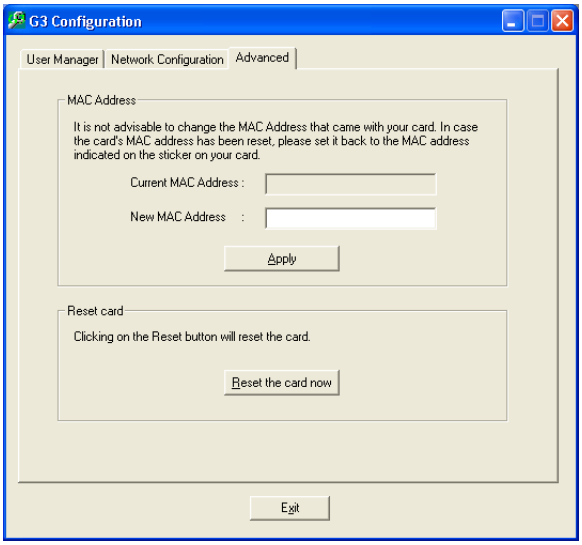
Network Configuration Tab

The *Network Configuration* tab allows you to change the way the MegaRAC G3 card connects to the network. By default, the MegaRAC G3 card obtains an IP address dynamically via DHCP. You can change this by specifying the IP address, network mask, and gateway.

The *Network Configuration* fields are explained below:

Field/ Button	Description
MAC Address	The *MAC Address* field displays the current *MAC* and *PHY* unique hardware address.
Configuration Method	The *Configuration Method* buttons allows you to select the network configuration method. You can choose either *Obtain IP address automatically* (DHCP) or *Use the following IP address* (STATIC) method.
IP Address	The *Internet Address* field allows you to specify a new IP address when you use a *STATIC* configuration method.
Subnet Mask	The *Network Mask* field allows you to specify a new network mask when you use a *STATIC* configuration method.
Gateway	The *Gateway* field allows you to specify a gateway when you use a *STATIC* configuration method.
Apply Button	The *Apply* button allows you to save your *New Network Configuration*.
Exit Button	The *Exit* button allows you to log off the MegaRAC G3 Card Configuration program.

Advanced Tab


G3 Configuration
User Manager
Network Configuration
Advanced
MAC Address
It is not advisable to change the MAC Address that came with your card. In case the card's MAC address has been reset, please set it back to the MAC address indicated on the sticker on your card.
Current MAC Address :
New MAC Address :
Apply
Reset card
Clicking on the Reset button will reset the card.
Reset the card now
Exit

The *Advanced* tab allows you to force your MegaRAC G3 card's on-board NIC to a specific MAC address.

The *Advanced* fields are explained below:

Field/ Button	Description
Current MAC Address	The *Current MAC Address* field displays your current MegaRAC G3 card's MAC address.
New MAC Address	The *New MAC Address* field allows you to specify a new MAC address.
Apply Button	The *Apply* button allows you to set the MegaRAC G3 card with the MAC address that you entered into the *New MAC Address* field.
Reset the card now Button	The *Reset the card now* button allows you to reset the MegaRAC G3 card's firmware.
Exit Button	The *Exit* button allows you to log off the MegaRAC G3 Card Configuration.

Appendix C MegaRAC G3 Remote Recovery Application (RRA)

MegaRAC G3 Card Remote Recovery Application (RRA)

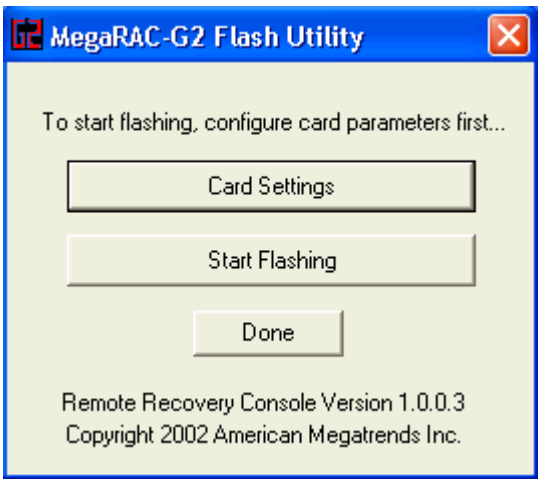
The *Remote Recovery Application (RRA)* is a recovery tool that can be executed from a remote client system located on the same network as the MegaRAC G3 card. You can use it to recover a failed flash attempt.

To run the *MegaRAC G3 Remote Recovery Application (RRA)*, double left click on the **`RRA.exe`** icon.

Note: You must physically set the MegaRAC G3 card you want to recover into *Recovery Mode*. To do this, simply short pins two and three on jumper JP12 on your MegaRAC G3 card.

Note: Your MegaRAC G3 card must be write enabled before you can flash an image to it. Confirm that pins one and two on jumper JP11 are shorted on your MegaRAC G3 card.

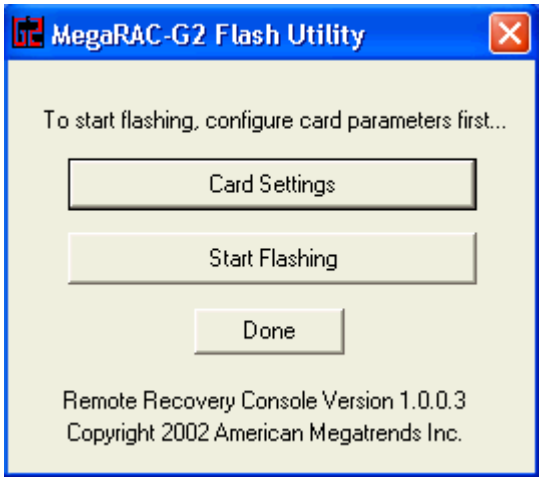
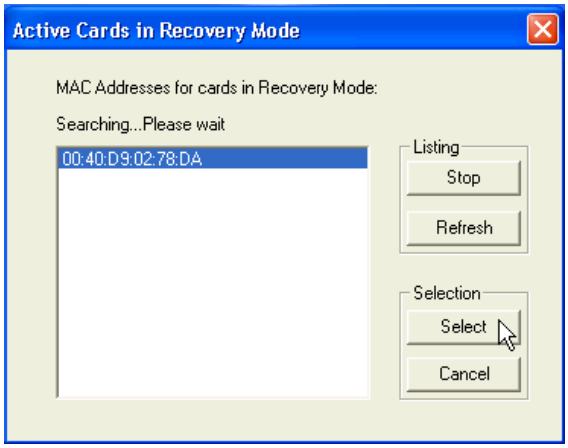
Note: The firmware upgrade process is a crucial operation. Make sure that the chances of a power or connectivity loss are minimal when performing this operation.



Button	Description
Card Settings	Left click the *Card Settings* button to configure the MegaRAC G3 card parameters. **Note:** You must configure the card parameters before you start flashing.
Start Flashing	Left click the *Start Flashing* button to begin flashing the firmware image to your MegaRAC G3 card.
Done	Left click the *Done* button to end the *MegaRAC G3 Remote Recovery Application (RRA)*.

Note: You must configure the card parameters before you can start flashing your MegaRAC G3 card's firmware.

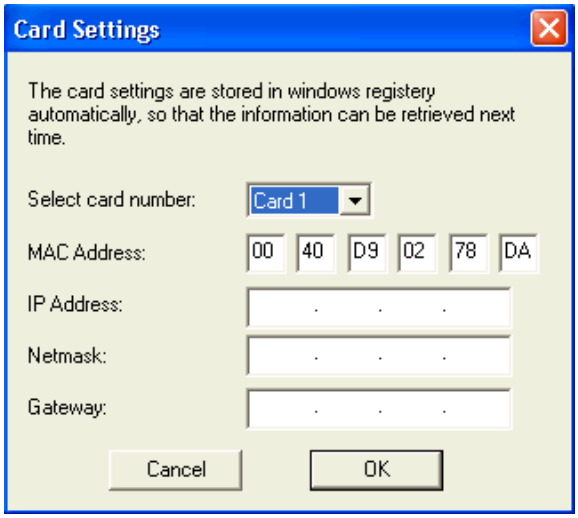
Cont'd

Step	Description
1	Left click the *Card Settings* button to begin. 
2	The *Active Cards in Recovery Mode* screen appears and starts to search for MegaRAC G3 cards in *Recovery Mode*.  Left click the MegaRAC G3 card's MAC address that you want to configure. The *Active Cards in Recovery Mode* buttons are explained in the table below:

Button	Description
Stop	The *Stop* button allows you to stop searching the network for active cards in *Recovery Mode*.
Refresh	The *Refresh* button allows you to start searching the network again for MegaRAC G3 cards' MAC addresses in *Recovery Mode*.
Select	The *Select* button allows you to specify the highlighted MegaRAC G3 card's settings. You can specify the MegaRAC G3 card's MAC, IP, Network Mask, and Gateway addresses as shown in the following step.
Cancel	The *Cancel* button allows you to cancel any new settings that are not saved.

Cont'd

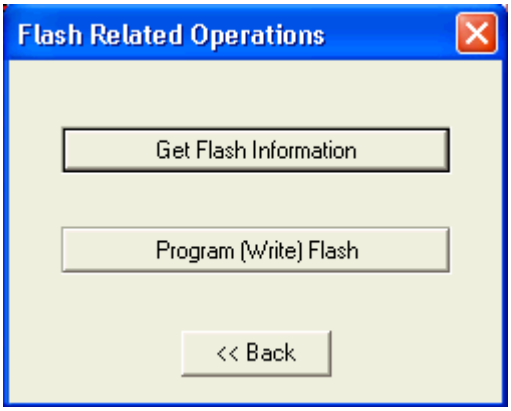
Step	Description
3	The *Card Settings* screen appears.



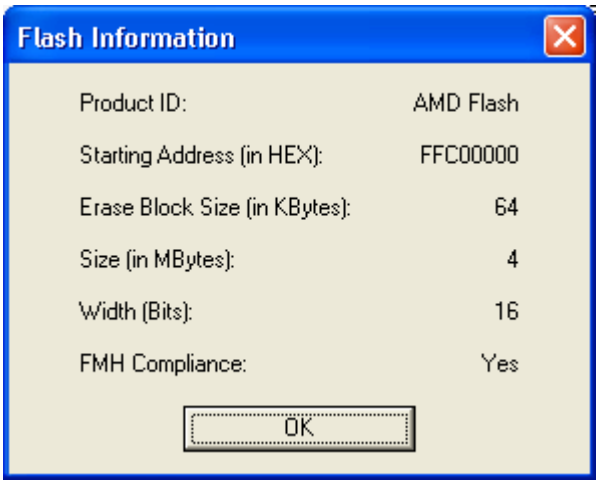
The *Card Setting* fields are explained in the table below:

Field/ Button	Description
Select Card Number dropdown box	The *MegaRAC G3 Remote Recovery Application (RRA)* automatically assigns a *card number* to the MegaRAC G3 card that it locates in *Recovery Mode*. This is helpful when you are trying to flash more than one MegaRAC G3 card. Think of the *Select Card Number* dropdown box as a shortcut to other MegaRAC G3 cards that are in *Recovery Mode*.
MAC Address	This field allows you to specify the MegaRAC G3 card's MAC Address. **Note:** New settings are stored in the Windows registry automatically. **Note:** When you specify the MegaRAC G3 card, it is advisable to set the MAC address back to the one indicated on the sticker physically located on the back of the MegaRAC G3 card's PCB.
IP Address	This field allows you to specify your MegaRAC G3 card's IP address. The IP address you assign is only valid during Recovery Mode.
Netmask	This field allows you to specify your MegaRAC G3 card's network mask. The network mask you assign is only valid during Recovery Mode.
Gateway	This field allows you to specify your MegaRAC G3 card's gateway or router address. The gateway address you assign is only valid during Recovery Mode.
Cancel Button	The *Cancel* button allows you to cancel any new settings that are not saved.
OK Button	The *Ok* button allows you to save any new settings that you have made and continue with the flashing function.

Cont'd

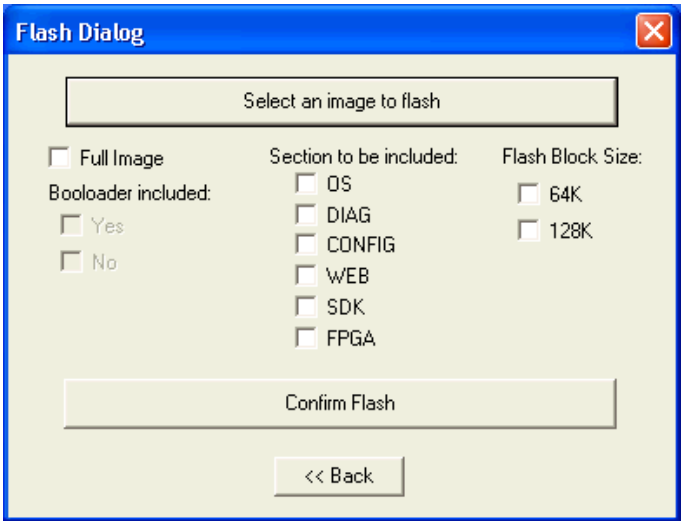
<table>
<tr><th>Step</th><th>Description</th></tr>
<tr><td>4</td><td>The Flash Related Operation screen appears.
 

The Flash Related Operation buttons are explained in the table below:
<table>
<tr><th>Button</th><th>Description</th></tr>
<tr><td>Get Flash Information Button</td><td>Left click the Get Flash Information button to get flash information.</td></tr>
<tr><td>Program (Write) Flash Button</td><td>Left click the Program (Write) Flash button to continue with the flashing function.</td></tr>
<tr><td>Back Button</td><td>Left click the Back button to go to the previous screen.</td></tr>
</table></td></tr>
<tr><td>5</td><td>When you left click the Get Flash Information button, the Flash Information screen appears.

Note: Pay special attention to the size of the Erase Block Size (in Kbytes). You need to select the correct Flash Block Size in the Program (Write) Flash section.
 
</td></tr>
</table>

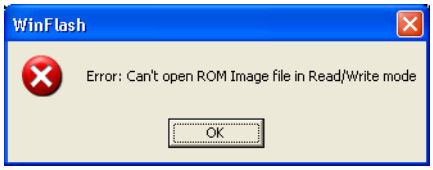
Cont'd

Step	Description
6	When you left click the *Program (Write) Flash* button, the *Flash Dialog* screen appears.

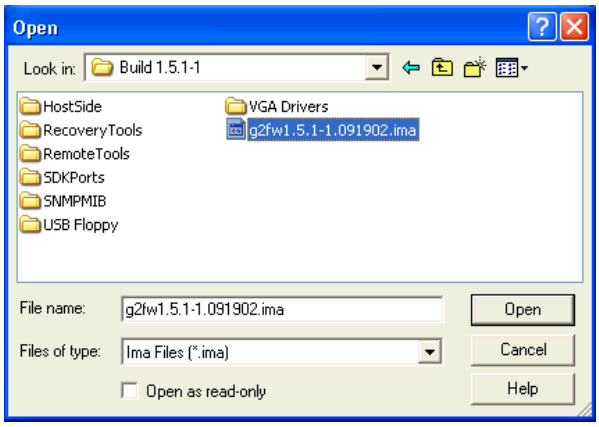


Left click the *Select an Image to flash* button to select an image (*.IMA) to flash.

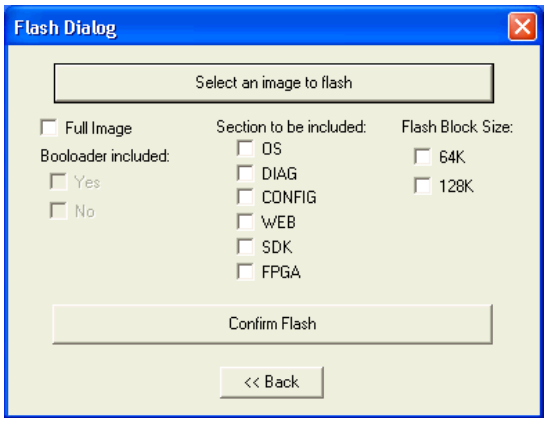
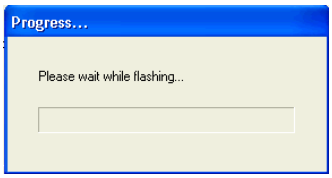
Note: Make sure that the file attributes of the image file are **NOT** *Read-Only*. If they are, you will receive and the following error message:



Left click the *Open* button to select the image.



Cont'd

Step	Description
7	Select how you want to flash the image to the MegaRAC G3 card. You can select to flash one or multiple sections or simply flash the *Full Image*. **Note:** It is recommended that you flash the *Full Image* if a failed flash has occurred. If you select *Full Image*, you also have the option to flash the *Boot Loader*. Select the *Flash Block Size*. You can find this information from the *Get Flash Information* button under the *Erase Block Size (in Kbytes)* field.  Left click the *Confirm Flash* button to confirm and complete the flashing function.
8	The *Progress* indicator window opens. 
9	The following window opens when the flash is successful. **Note:** If your flash fails, try to flash the image again with *Full Image* enabled. Do not flash the *Boot Loader*.

Appendix D Troubleshooting

Screen Distortion

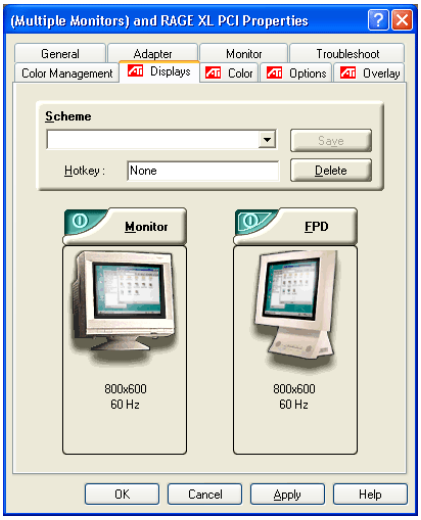
Problem

The screen on the host system is blurry when using screen resolutions lower than 1024x768. This happens when you use both console redirection and the physical terminal on the host system.

Clarity	Image
Normal	
Blurry	

Symptom

The MegaRAC G3 card's VGA chip has both a digital and analog signal. See the picture below. The digital signal is the *FPD*. The analog signal is the *Monitor*.

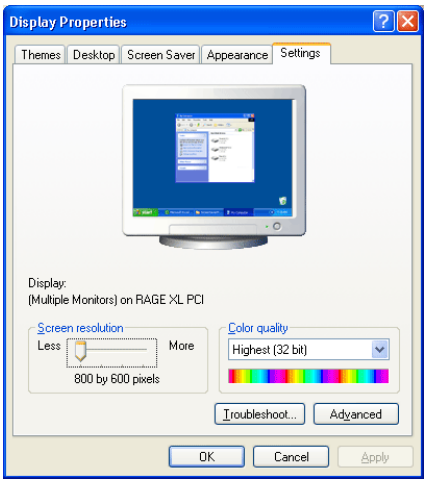


Cont'd

Screen Distortion, Continued

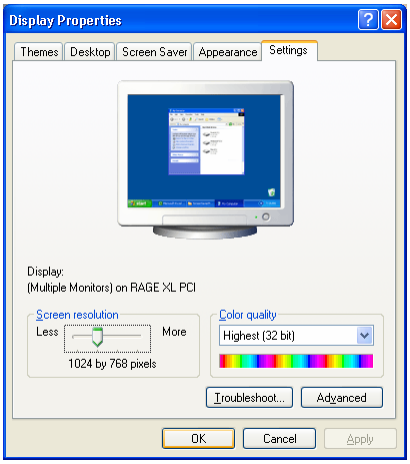
Symptom, Continued

When the analog signal is set lower than 1024x768 (for example: 800x600), the MegaRAC G3 card's video controller will use ratio metric expansion to bring the screen to 1024x768. Because of this, the screen will become blurry.



Solution

To correct this, set the screen resolution on the host system to 1024x768.



BMC Not Responding

Problem

The BMC does not respond.

Symptom

You cannot power off, power on, or power cycle the host system. You cannot obtain Host System health information.

Solution

Make sure that in IPMI configuration "Use server's onboard BMC to access health information" is checked. Confirm that the BMC I2C address needs to be set to 0X20.

When the BMC is in locked state the user cannot get the sensor information. In order to make the BMC come out of that state the system needs to be rebooted. The BMC's I2C address should never be set to 0x21 – that is not a valid address. 0x20 is the correct address for almost all BMCs. If it is not, the BMC or motherboard provider must supply the correct one.

Many BMCs feature a reset button that can be used to reset the BMC only. That button can be used to reset the BMC. If using a BMC without a BMC reset button, the system must be powered off and the power cable(s) unplugged. Some BMCs will run on system standby power, and stay on even though the system is in an off state.

Cannot Power On the Host System Remotely

Problem

Cannot remotely power on, power off, or power cycle the host system.

Symptom

When connected to the MegaRAC G3 remotely (using the GUI), power on, power off, and power cycle does not work properly.

Solution

The user should make sure that the feature cable is connected properly from the G3 card and the host system's main board and chassis. The wall AC adapter must be connected to the MegaRAC G3 card in order for power control options to operate properly.

Complete Flash

Problem

Deciding whether to do a *Complete* flash instead of selecting individual modules during a firmware upgrade.

Symptom

After flashing the new firmware to the MegaRAC G3, there are unexpected errors.

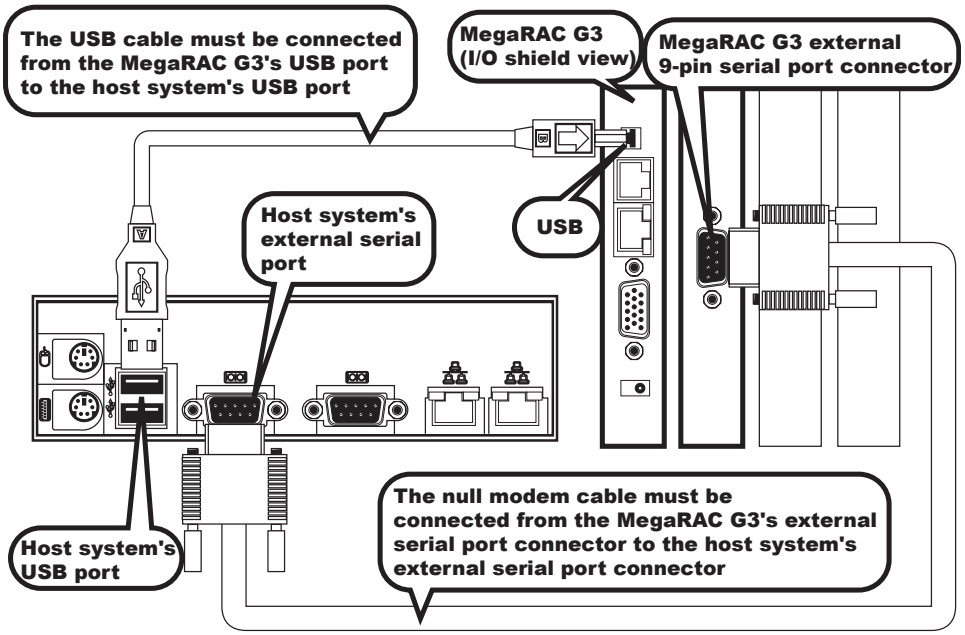
Solution

Whenever there is a change in Config section of the new firmware image, the user must perform a *Complete* flash. Otherwise the default selected modules are sufficient for flashing.

Appendix E Serial Over LAN

Hardware Setup

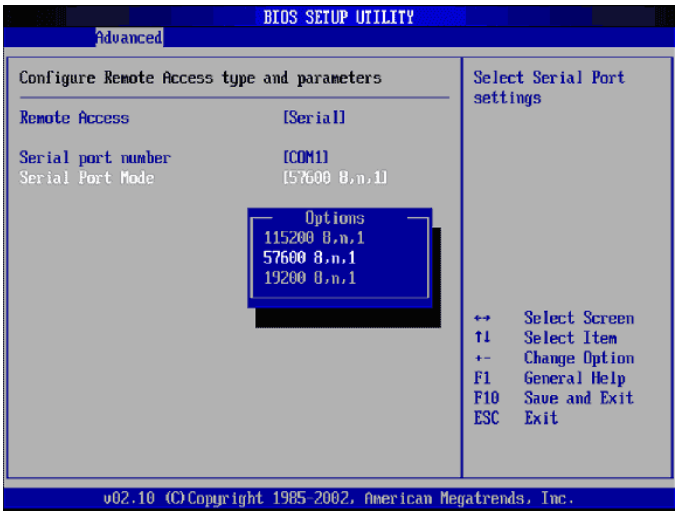
You can use an external serial port connector and null modem cable to setup the MegaRAC G3 to perform Serial over LAN operations. To do this, you must have an external 9-pin serial port connector and cable plugged into the MegaRAC G3 card's serial port connector at JP2. Once the external 9-pin serial port connector is installed and secured to the chassis, attach the null modem cable as illustrated below:


The USB cable must be connected from the MegaRAC G3's USB port to the host system's USB port
MegaRAC G3 (I/O shield view)
MegaRAC G3 external 9-pin serial port connector
Host system's external serial port
USB
Host system's USB port
The null modem cable must be connected from the MegaRAC G3's external serial port connector to the host system's external serial port connector

Cont'd

BIOS

After you have established a physical connection from your host system's serial port to you MegaRAC G3 card, you must enable *Remote Access* in your AMIBIOS.



Step	Description
1	From the host system's terminal, enter the AMIBIOS setup.
2	Confirm that your *Onboard Serial Port* you are using is enabled.
3	Enter the *Remote Access Configurations* menu.
4	Set the *Remote Access* setting to *[Serial]*.
5	Set the *Serial Port Number* to *[COM1]* or *[COM2]* depending on the serial (COM) port you are using.
6	Set the Serial Port Mode baud rate you desire. By default, it is set to *[19200 8,n,1]*.
7	If available, you can set the *Post-Boot Support* option. When enabled, the MegaRAC G3 attempts to output the DOS screens or the initial windows text screens. This is really handy when you want to see the *OS Boot Menu*.
8	Save and Exit the BIOS.

Appendix F Modem Daughterboard

Overview

The optional modem allows the MegaRAC G3 card to do the following:

Feature	Instructions located…
configure and reset the MegaRAC G3 card	this appendix and *Chapter 4 : Using Your* MegaRAC G3
update the MegaRAC G3 card's firmware	this appendix and *Chapter 4 : Using Your* MegaRAC G3
view the MegaRAC G3 card's health information and event log	this appendix and *Chapter 4 : Using Your* MegaRAC G3
view the host system's health information	this appendix and *Chapter 4 : Using Your* MegaRAC G3
remotely control the host system's hardware reset and power cycle	this appendix and *Chapter 4 : Using Your* MegaRAC G3
serial over modem text redirection	this appendix and *Appendix E: Serial over LAN*

Note: Host system health information is only available if you have an SDR and Soft Processor (SP) File for the host system's motherboard or it has a *Baseboard Management Controller* (BMC). The BMC must be IPMI 1.0 compliant or greater.

Note: The optional modem is **NOT** designed for *Console Redirection*. However, you can still perform *Console Redirection*, but it is debilitating and extremely slow.

Note: As of March 15th, 2004, the MegaRAC G3 firmware does not support the optional modem.

Before You Start

Avoid Electro-Static Discharge (ESD)

Electro-Static Discharge (ESD) can damage the MegaRAC G3 card, modem daughterboard, and other system components. Keep your modem daughterboard in its anti-static bag until it is to be installed. Avoid contact with any component or connector on any adapter card, printed circuit board, or memory module. Handle these components by the mounting bracket.

Cont'd

Before You Start, Continued

Avoid Electro-Static Discharge (ESD), Continued

Perform all unpacking and installation procedures on a ground-connected anti-static mat. Wear an anti-static wristband grounded at the same point as the anti-static mat. You can also use a sheet of conductive aluminum foil grounded through a one megaohm resistor instead of the anti-static mat. Similarly, a strip of conductive aluminum foil wrapped around the wrist and grounded through a one megaohm resistor serves the same purpose as a wristband.

Modem Daughterboard Installation

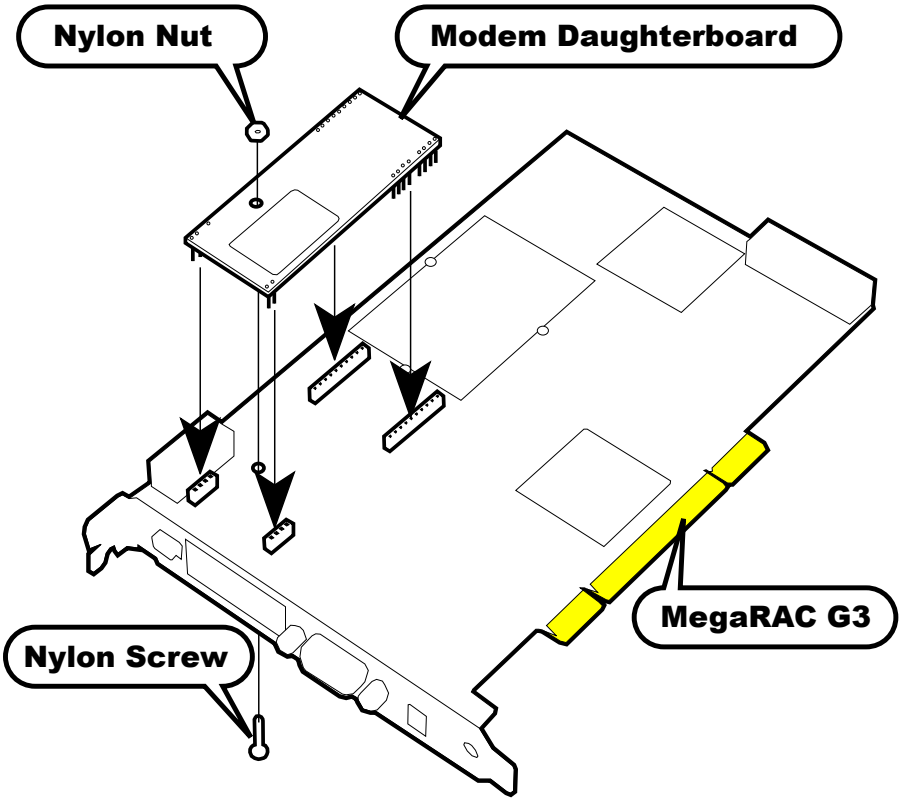
The MegaRAC G3 modem daughterboard is an optional component. Use the following steps to install the modem daughterboard onto the MegaRAC G3 card.

Step	Action
1	Unpack the modem daughterboard.
2	Locate JP10 on the MegaRAC G3 card. It has a series of pinholes that allow you to insert the modem daughterboard. Match the modem daughterboard and the pin holes so that the pins align properly. Insert the modem daughterboard by sliding it straight down into the MegaRAC G3 card. See the illustrations on the following page. **Note:** If the MegaRAC G3 card is already installed into a host system, power down the host system and MegaRAC G3 card first. Physically unplug all external and internal cables from the MegaRAC G3 card. Remove the MegaRAC G3 card from the host system.
3	Plug in the MegaRAC G3 card into the host system and attach internal cables
4	Connect external cables **Note:** For the complete MegaRAC G3 card installation procedures, see *your MegaRAC G3 Remote Management Card User's Guide* located on the *MegaRAC™ G3 CD*.

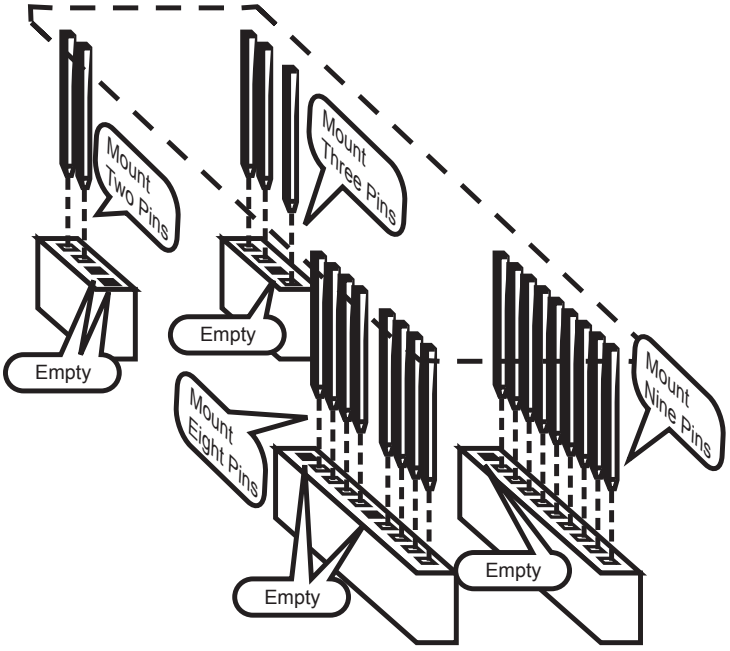
Note: Inspect the cardboard carton for obvious damage.

Cont'd

Modem Daughterboard Installation Illustration



Pin Alignment Illustration



Appendix G Port Usage

Port Usage Table

Port	Protocol	Purpose	Direction
5121	TCP	Remote Keyboard and Mouse data (iUSB HID)	Bi-directional. Data sent from the MegaRAC G3 card to the client as well as from the client to the MegaRAC G3 card.
5120	TCP	CD Redirection (iUSB – CD)	Bi-directional. Data sent from the MegaRAC G3 card to the client as well as from the client to the MegaRAC G3 card.
5123	TCP	Floppy Redirection (iUSB- Floppy)	Not used in newer firmware
7578	TCP	Video Redirection	Bi-directional. Data sent from the MegaRAC G3 card to the client as well as from the client to the MegaRAC G3 card.
6577	TCP (& SSL)	CURI (API) (Same is used for SSL)	Bi-directional. Data sent from the MegaRAC G3 card to the client as well as from the client to the MegaRAC G3 card.
161	UDP	SNMP V3 Access	Bi-directional. Data sent from the MegaRAC G3 card to the client as well as from the client to the MegaRAC G3 card.
3072	UDP	Trap out port	Outgoing from the MegaRAC G3 card to the Trap destination.
80	HTTP over TCP	Web Server & CLIP	Bi-directional. Data sent from the MegaRAC G3 card to the client as well as from the client to the MegaRAC G3 card.
443	HTTPS over TCP	Web Server & CLIP	Bi-directional. Data sent from the MegaRAC G3 card to the client as well as from the client to the MegaRAC G3 card.

Appendix H MAC Address Map

MAC Address	Location	Description
00-40-D9-02-9B-3C	Server Room, Rack 2, 5	Windows 2003 Advanced Server, Mail Server

Notes

Appendix I Host System USB Mouse and Keyboard Considerations for Linux 7.x

Overview

This appendix describes how to set up the USB keyboard and mouse on the host system running RedHat Linux 7.x so that they can be redirected.

Note: For RedHat Linux 8.x, disregard these instructions.

File Description

This package contains two files as described below:

```
MOUSEC~1 RPM 118,299 11-28-01 16:43     mouseconfig-4.22-1.i386.rpm
README.PDF                              this file
```

The first file can be downloaded from the following website:

`http://www.redhat.com/support/errata/RHBA-2001-062.html`

Check Your AMIBIOS Settings

Check your system BIOS to verify that the *OnBoard USB* and *Legacy USB* options are *Enabled*. If not, the USB devices cannot function.

USB Keyboard

You will be able to redirect the keyboard and use the keyboard on the host system at the same time.

Note: LILO is not USB aware. The system BIOS must have USB keyboard support. If not, you cannot use the redirected keyboard to select a different boot image.

USB Mouse

There are two possible scenarios:

- If you first used a PS/2 mouse to install the Linux and you now want to add USB mouse support, follow the steps in the table below.
- If you first use a USB mouse to install the Linux and you now want to add PS/2 mouse support, reboot the computer to allow Linux to configure and reallocate the interrupt resources for both the USB mouse and PS/2 mouse. After that, follow the steps in the table below.

Step	Instructions
1	Run the following command to check what **X** server the system links to: `ls -l /etc/X11/X`

2	**If linking to XFree86…**
	
	If the **X** links to **/usr/X11R6/bin/XFree86**, edit the **/etc/X11/XF86Config-4** file and add the following text in the "`ServerLayout`" section:
	
	`InputDevice "mouse1" "SendCoreEvents"`
	
	Next, add a new "`InputDevice`" section after another "`InputDevice`" section as shown below:
	
	`Section "InputDevice"`
	`  Identified "Mouse1"`
	`  Drive "mouse"`
	`  Option "Protocol" "IMPS/2"`
	`  Option "Device" "/dev/mouse"`
	`  Option "ZaxisMapping" "4 5"`
	`EndSection`

3	**If linking to XF86_SVGA…**
	
	If the **X** links to **/usr/X11R6/bin/Xwrapper** or **/usr/X11R6/bin/XF86_SVGA**, edit the **/etc/X11/XF86Config** and add a new section as shown below:
	
	`Section "Xinput"`
	`  SubSection "mouse"`
	`  DeviceName "USB mice"`
	`  Protocol "imps/2"`
	`  XAxisMapping 4 5`
	`  Port "/dev/input/mice"`
	`  AlwaysCore`
	`  EndSubSection`
	`EndSection`

4	Refresh the X server. After you make and save all the changes to the **XF86Config** (or **XF86Config-4**) file, press the <CTRL>, <ALT> and <BkSp> keys to restart the **X** server and let the new settings take effect. If this does not work, type "`startx`" in text mode or reboot the host system.

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